R E P O R T R E S U M E S

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TRANSPARENCY MASTERS FOR AGRICULTURAL EDUCATION, AN EXPERIMENT IN COOPERATIVE DEVELOPMENT AND USE OF VISUAL AIDS BY VOCATIONAL AGRICULTURE TEACHERS. INTERIM REPORT.

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THE EFFECTS OF INVOLVING VOCATIONAL AGRICULTURE TEACHERS IN THE DEVELOPMENT AND EXPERIMENTAL USE OF OVERHEAD PROJECTION MASTERS WERE TESTED IN THIS STUDY. SIXTEEN TEACHERS ATTENDED A WORKSHOP AND OUTLINED THE CONTENT FOR AN EXPERIMENTAL SET OF MASTERS. AFTER EXPERIMENTAL USE OF THIS SET AT A SUBSEQUENT WORKSHOP, 35 VOCATIONAL AGRICULTURE TEACHERS EVALUATED THE USEFULNESS OF THE MASTERS, RECOMMENDED REVISIONS, AND SUGGESTED ADDITIONAL MASTERS. THE FINAL SET OF EXPERIMENTAL MASTERS WAS MADE AVAILABLE TO THE STATE'S TEACHERS FOR USE IN THEIR CLASSES DURING THE 1966-67 SCHOOL YEAR. RETURNED QUESTIONNAIRES INDICATED THAT 83 PERCENT OF THE TEACHERS USED THE MASTERS DURING THE SCHOOL YEAR, AN ADDITIONAL 6 PERCENT PLANNED TO USE THE MASTERS AS SOON AS EQUIPMENT WAS AVAILABLE, AND 89 PERCENT DESIRED ACCESS TO ADDITIONAL MATERIAL OF THIS TYPE. IT WAS CONCLUDED THAT COOPERATIVE WORK ON INSTRUCTIONAL MATERIALS BY TEACHERS STIMULATES INTEREST IN THEIR USE OF SUCH MATERIALS AND BROADENS THEIR CONCEPTS OF INSTRUCTION. RECOMMENDED USES OF THE MASTERS, METHODS FOR USING MASTERS TO MAKE TRANSPARENCIES, A PREPARED SET OF TRANSPARENCIES, AND THE QUESTIONNAIRE SENT TO THE TEACHERS ARE INCLUDED IN THE DOCUMENT. (WB)

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TRANSPARENCY MASTERS

FOR

AGRICULTURAL EDUCATION

by

Gilbert A. Long
Joel H. Magisos
Stanford A. Sleeth

June 30, 1967

VT000079

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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TRANSPARENCY MASTERS

FOR

AGRICULTURAL EDUCATION

An Experiment in Cooperative Development and Use of Visual Aids by Vocational Agriculture Teachers

Project Number OE7-0031
Contract Number OEG-4-7-070031-1626

by
Gilbert A. Long, Joel H. Magisos and Stanford Sleeth

June 30, 1967

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Department of Education, Washington State University, Pullman, Washington
State Board for Vocational Education, Olympia, Washington

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ACKNOWLEDGMENTS

We wish to acknowledge the contributions of the Washington State Board of Vocational Education made to financing the conference at which these materials were conceived. We recognize the thought and work of the Vocational Agriculture Teachers who contributed ideas and are using the projection masters experimentally.

Special appreciation is due Ernest G. Kramer, Assistant State Superintendent for Vocational Education, and Bert Brown, State Director of Agricultural Education.

We thank Marilyn May for thoughtful editorial work and patient retyping of this manuscript.

INTRODUCTION

Purpose

The purpose of this project is to ascertain the effects of involving teachers in development of visual instructional materials.

For decades, vocational educators have utilized various devices to actively engage teachers in improvement of curricula and instructional materials.

At present in circumstances which cause rapid change in requirements for successful work, wide-spread teacher participation is of unprecedented importance.

Related Research

Vocational teacher supervisors seeking to stimulate curriculum development and use of modernized instructional materials have long recognized the values of involvement. Psychologists and sociologists have researched processes by which involvement increases interest and a sense of identification with new developments and a desire to participate in their use. Curriculum supervisors have explored arrangements and processes designed to enlarge dimensions of participation in developmental processes.

The rationale for this experiment was derived from research indicating the influence of group effort and resultant group relationships on (1) participation, (2) the sense of identification derived from participation, and (3) the effects of participation and personal identification on use of innovations.

The research and observations of Katz and Lazarsfeld[1], Cohen[2], Sherif and Hovland[3] indicate that cognitive and personal involvement in a process (1) enlarges peoples' sense of identity, (2) increases their comprehension, (3) stimulates purposeful personal effort, and (4) activates a will to pursue

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[1]Katz, Elihu, and Paul F. Lazarsfeld, Personal Influence, Free Press, 1955.

[2]Cohen, Arthur R., Attitude Change and Social Influence, Basic Books, 1964.

[3]Sherif, Muzafer, and Carl I. Hovland, Social Judgment, Yale University Press, 1961.

purposes derived from consensus of group thought. Zander and Medow[4] add evidence that improvements of performance impell individuals and groups to continue sustained efforts to make further improvements.

This experiment was designed to test the degrees to which such interpersonal group-oriented relationships could be utilized to stimulate development and utilization of visual aids by vocational agriculture teachers. It was hypothesized that group work on development of overhead projection masters would activate use of those devices and enlarge interest in development and wider use of such materials.

METHOD

At a workshop 16 Vocational Agriculture teachers outlined content for an experimental set of masters. After experimental use at a subsequent workshop, 35 Vocational Agriculture teachers (1) evaluated the usefulness of the masters, (2) recommended revisions, and (3) suggested additional masters.[5] During the 1966-67 school year in their classes they used the masters experimentally. By a questionnaire shown in Appendix A teachers reported their use of the masters during the 1966-67 school year and expressed opinions about the usefulness of the masters.

RESULTS

Returns of questionnaires (see Appendix A) indicate that 83 per cent of Washington State Vocational Agriculture teachers have used the masters during the 1966-67 school year. An additional 6 per cent indicate that they want to use the masters as soon as equipment is available. Eighty-nine per cent report that they would like to have access to additional materials of this type.

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[4]Zander, Alvin, and Herman Medow, "Individual and Group Levels of Aspiration," Human Relations, 16:89-104, February, 1963.

[5]U.S. Department of Health, Education, and Welfare, Effects of Cooperative Overhead Projection Master Development, Final Report (Pullman, Washington: State Board of Vocational Education and Department of Education, November 30, 1966; Project No. ERD-257-65.

The above evidence indicates that workshops providing opportunity for cooperative work on instructional materials related to expressed interests of teachers evoke substantial amounts of effort and broaden concepts of instruction.

DISCUSSION

Results indicate that vocational agriculture teacher participation in development of visual aids increases use of such aids and activates wide-spread effort to develop additional aids. The effects hypothesized on the basis of the research and concepts of Katz, Lazarsfeld, Cohen, Sherif, Hovland, and Zander appear to materialize from workshop activities. To the degree that such is the case, instructional materials workshops offer promise as means of engaging large numbers of vocational teachers in the analytical thought processes necessary to keep instruction congruent with swiftly changing needs. Such efforts can also contribute to substantial and wide-spread enlargement of vocational teachers' capabilities to meet modern needs.

RECOMMENDATIONS

In view of the above apparent results, the author and the Project staff recommend that State and local vocational teacher supervisors:

Devise and use means of measuring results obtained by use of these transparency masters.

Consult with researchers and advisory committees to identify areas in which need for development and use of updated instructional materials is urgent.

Discuss needs and development procedures with teachers.

Organize and conduct workshops at which teachers can participate in development of new materials.

Cooperate with State Departments of Vocational Education and Regional Educational Research Laboratories and publishers to arrange wide-spread dissemination of materials so developed.

Continuing effort to consult with subject-matter specialists in the development and revision of projection transparency masters.

SUMMARY

The purpose of this Project was to test the effects of involving vocational agricultural teachers in the development and experimental use of instructional materials.

Evidence indicates that cooperative development and use of projection masters by vocational agricultural teachers stimulate interest in use of such materials and broaden teachers' concepts of instruction.

RECOMMENDED USES OF MASTERS

Transparency masters may be utilized by the teacher in a variety of ways. The flexibility of use of the transparency master is probably as diverse as the talents of the teacher using it. Described herein are several suggestions for use of the overhead projection transparency master.

Presentations

Most teachers will first use transparency as an aid in the presentation of material to a class. The masters in this series are arranged in sets allowing the preparation of a basic transparency to which may be hinged one or more overlays to illustrate special features, teach nomenclature. These sets can also be used for drill, review, or testing.

During its use, any transparency may be modified with the use of a wax pencil, felt pen, or special overhead pencil. During a presentation, the teacher may mark, shade, draw, or write on the transparency. This can be done on a cover sheet of clear acetate to avoid leaving permanent scratches on the transparency. The clear acetate cover sheet may be cleaned and reused.

The transparency may be presented in consort with other media. For example, a movie projector or filmstrip projector might be focused on the same screen prior to the presentation and used at an appropriate time in the sequence.

Spirit Duplicated Copies of Masters for Student Use

Spirit duplicated copies of masters may be produced by a thermal transfer process in a dry copier (i.e. Thermofax) and multiple copies prepared on a spirit type duplicator. These multiple copies of the overhead projection transparency masters will afford the teacher with the opportunity of providing each student with a copy of the material being presented on the screen. Thus, each student can label, take notes, review, and test himself. When overlays are involved, an additional spirit duplicating master might be prepared for each overlay, possibly in different colors, and used to develop a multi-colored multiple copy.

Self-Instruction

Students may use the overhead projection transparency on the machine themselves (individually or in groups) for enrichment, remedial, or study purposes.

Chalkboard and Display Patterns

An overhead projection transparency may be used to project an enlarged image on a chalkboard so that the teacher might work up a satisfactory sketch or diagram for variety or for referral when using the overhead projector for other purposes in the same presentation.

As a means of preparing displays for fairs, bulletin boards, and posters, the transparency is appropriate for the projection of an enlarged image which can be quickly traced with accuracy. The distance of the projector from the paper may be adjusted to enlarge or reduce the size of the image. The opaque projector is also suitable for this purpose, especially in projecting material not prepared as transparencies.

Use and Testing

Some of the items presented here include an overlay which provides a set of numbers. These numbers may be used in reviewing nomenclature without the benefit of the labels (on another overlay). The teacher may wish to use these numbers for testing of the student's knowledge of the nomenclature. If so, he should avoid using the numbers prior to the test as students may have a tendency to memorize numbers rather than parts. Additional sets of numbers may be prepared with pencil or pen on clear acetate.

METHODS USING MASTERS TO MAKE TRANSPARENCIES

The masters which follow are suitable for diazo processing.

Plastic

Any of the following materials can be used to trace the masters directly on to plastic.

China marking pencils, plastic inks, or felt pens may be used on clear acetate of .005 or .10" thickness.

Treated or coated acetate permits the use of transparent colored drawing inks and lettering aids.

A fine-tooth frosted (matte) acetate permits the use of inks, felt pens, and transparent colored pencils. A clear plastic spray should be applied carefully and lightly on the frosted side on which the tracing has been placed.

Heat Sensitive Film

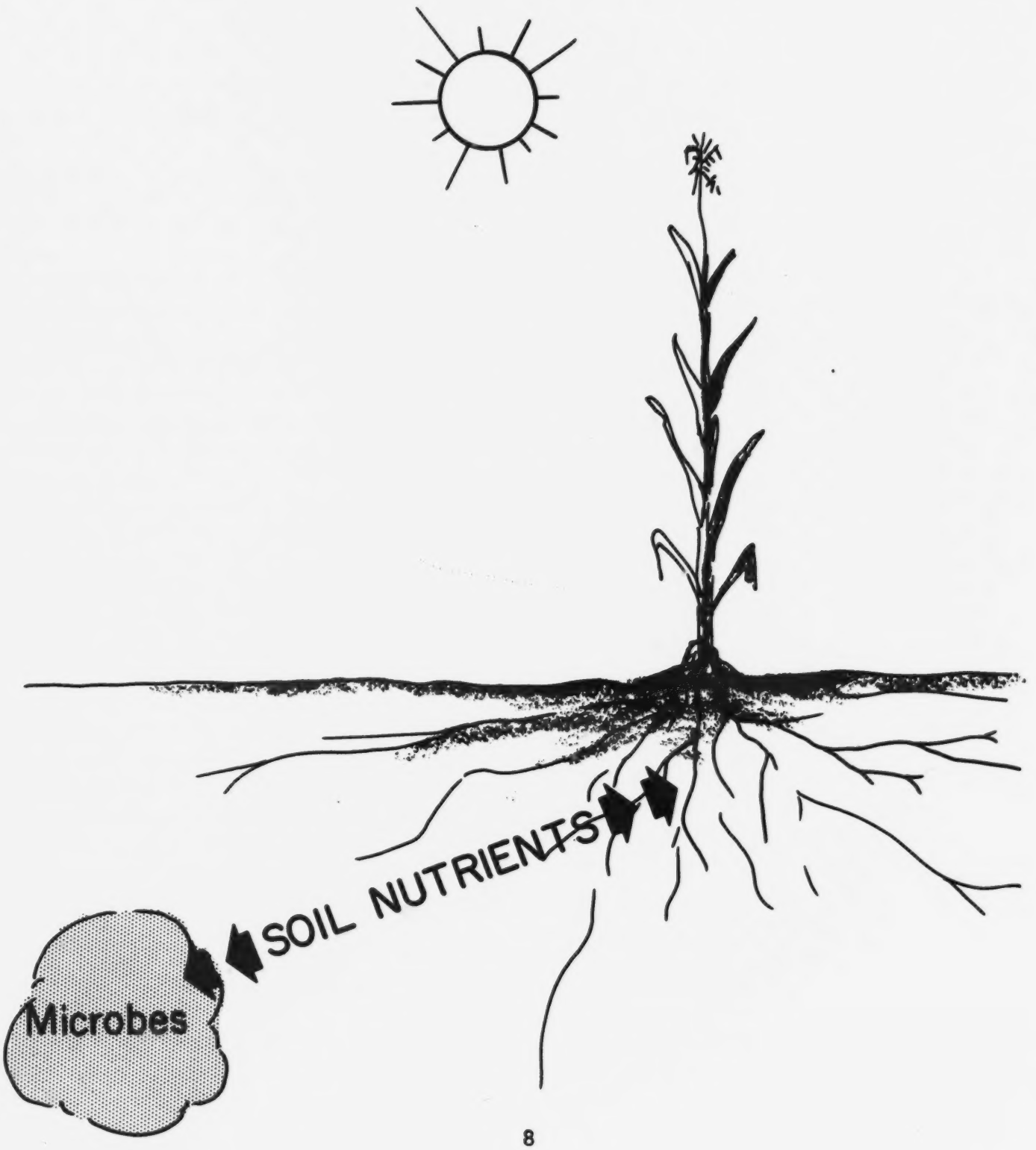
The use of heat sensitive film to produce transparencies permits completely dry and immediate results. The film is placed directly on the master, and infra-red light is passed through the film to the master. The dark portions on the master absorb the heat and the increased temperature affects the film and produces the images. Actually, the process is as simple as following the manufacturer's directions in placing the film on the master and running the two through a dry copy machine (i.e. Thermofax).

Photocopy Film

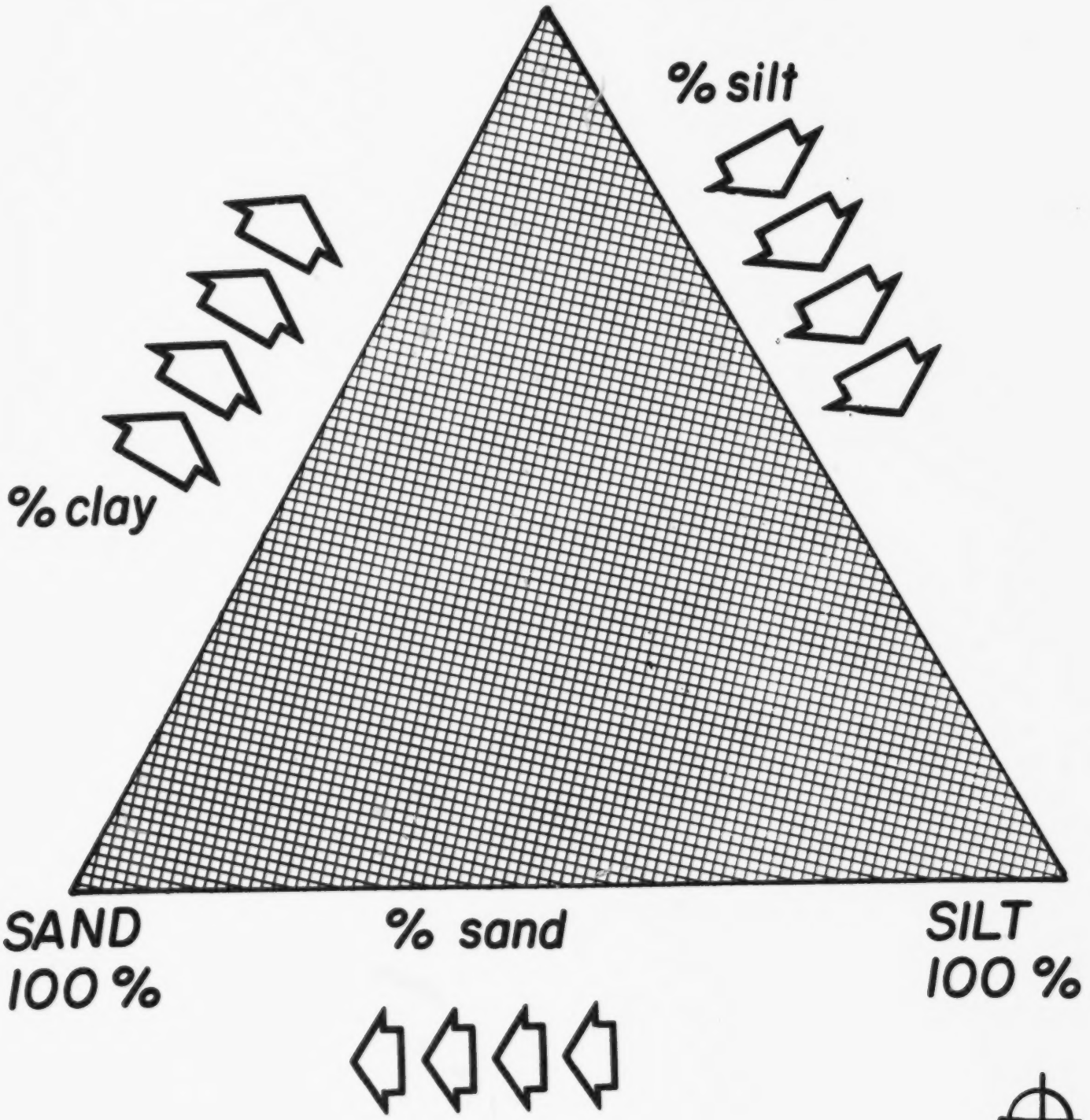
This procedure involving a reflex exposure is a contact photographic process usable in subdued room light. Light is passed through the negative film and is reflected back from the lighter surfaces of the master to expose the negative. Placed in contact with positive film and developed in a chemical solution, a positive transparency is produced. A copy machine, negative and positive films, and a chemical solution are necessary.

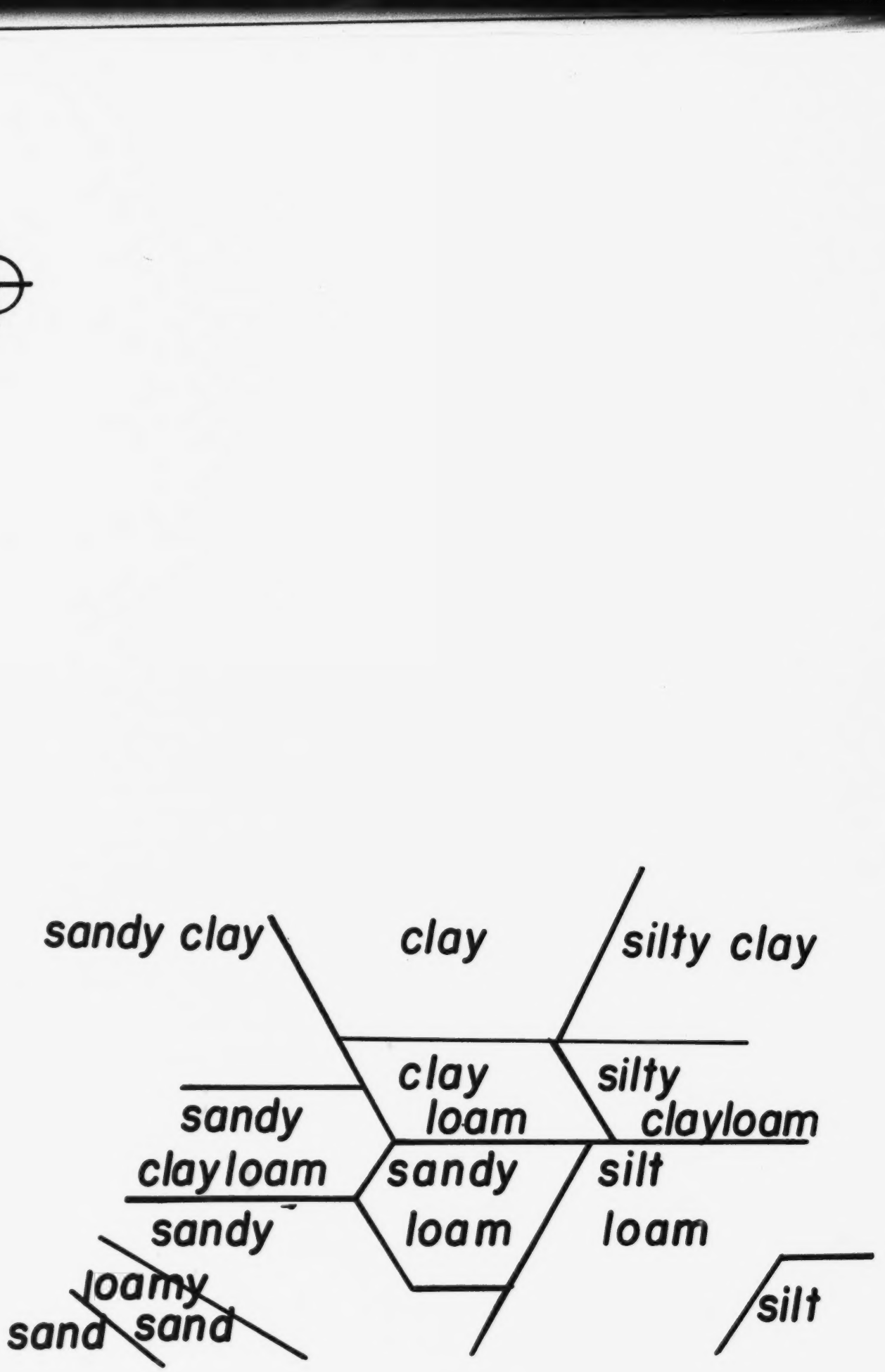
Diazo Film

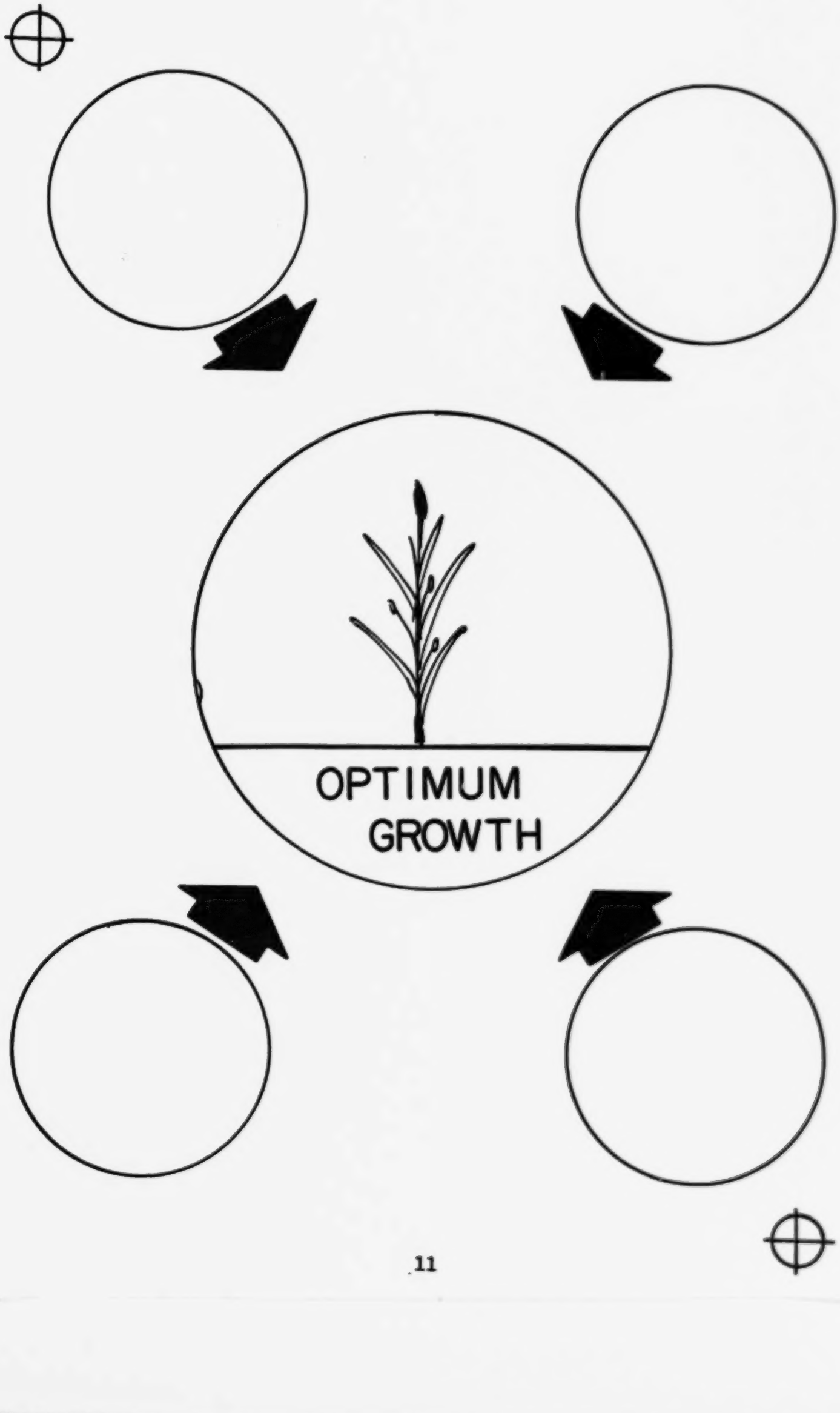
Transparencies may be produced in ten brilliant colors by use of dye-coated diazo films. Exposure to ultraviolet light chemically changes the dye coating so that no image will appear on the exposed surfaces when the film is developed in ammonia fumes. Ultraviolet light is passed through a translucent master to the film. Ink images on the translucent master shield the diazo film. When developed, the film will reproduce the image in colors corresponding to those on the master. Diazo film is developed in a jar or tank in which ammonia has been allowed to evaporate. By the diazo process overlays may be produced in colors different than those of the basic transparency.


SOIL NUTRIENTS
Microbes

Textural Classification .




sandy clay
clay
silty clay
clay loam
silty clayloam
sandy clayloam
sandy loam
silt loam
sandy loamy sand
sand
silt

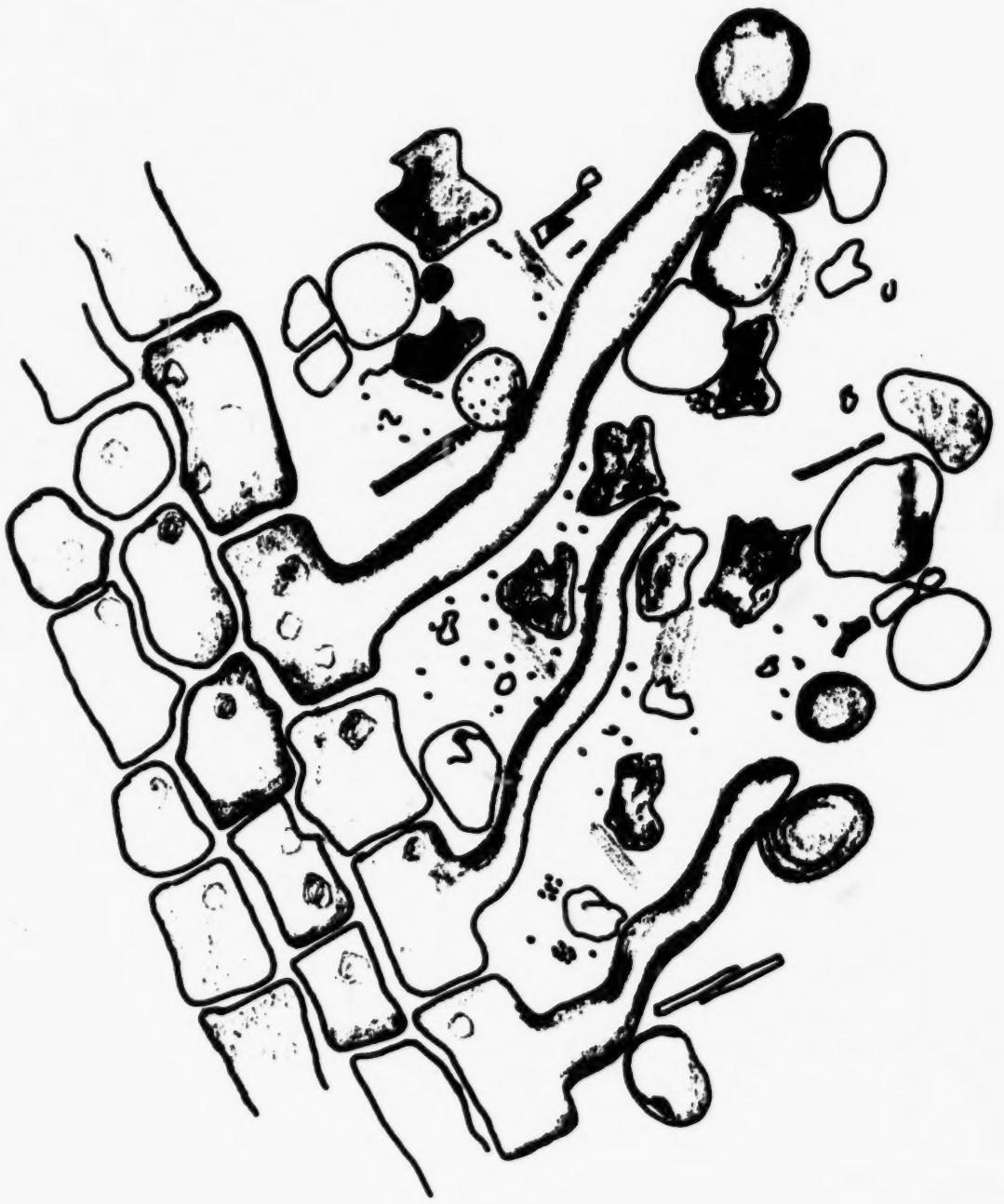

OPTIMUM
GROWTH

OPTIMUM
LIGHT

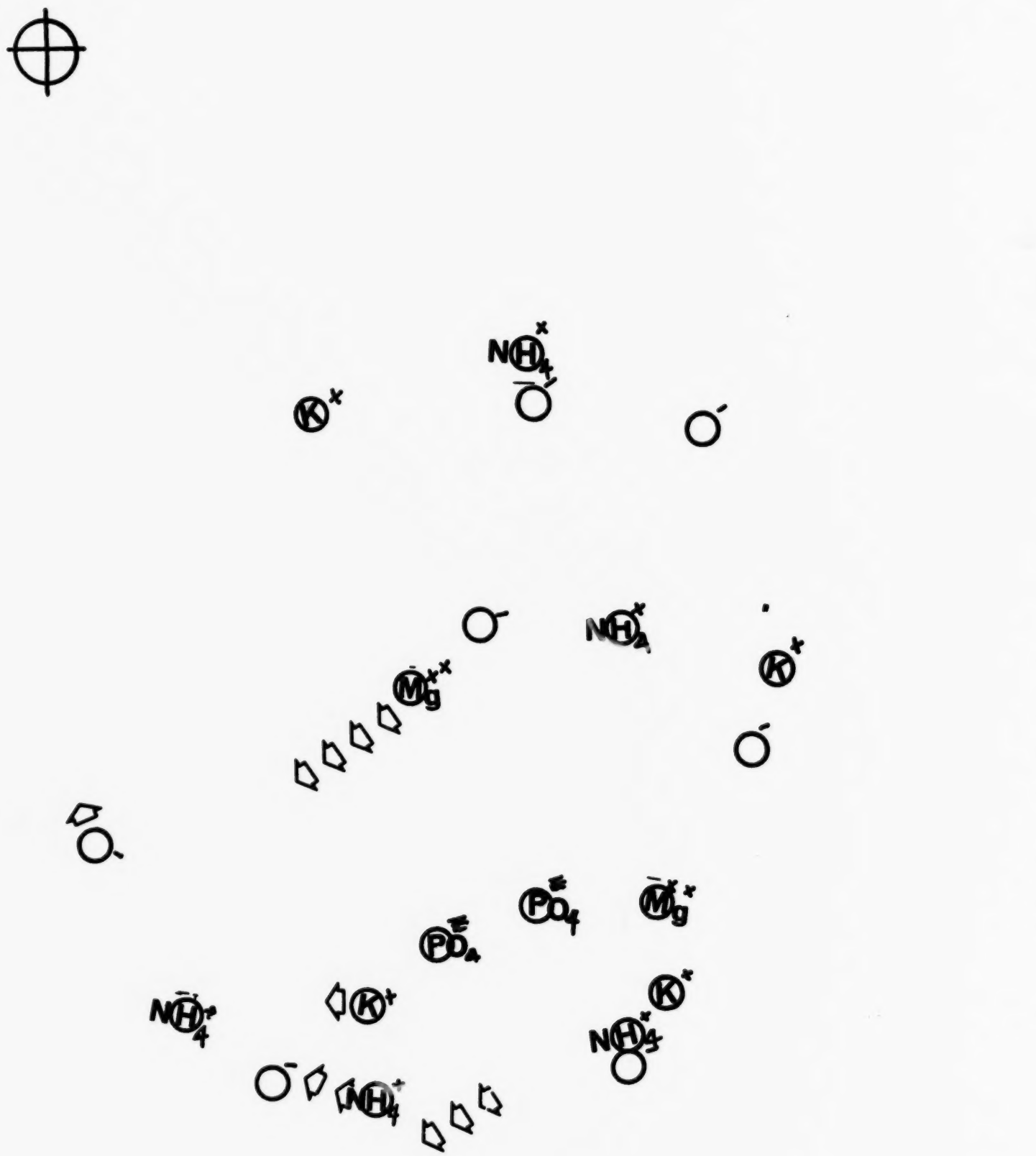
OPTIMUM
HEAT

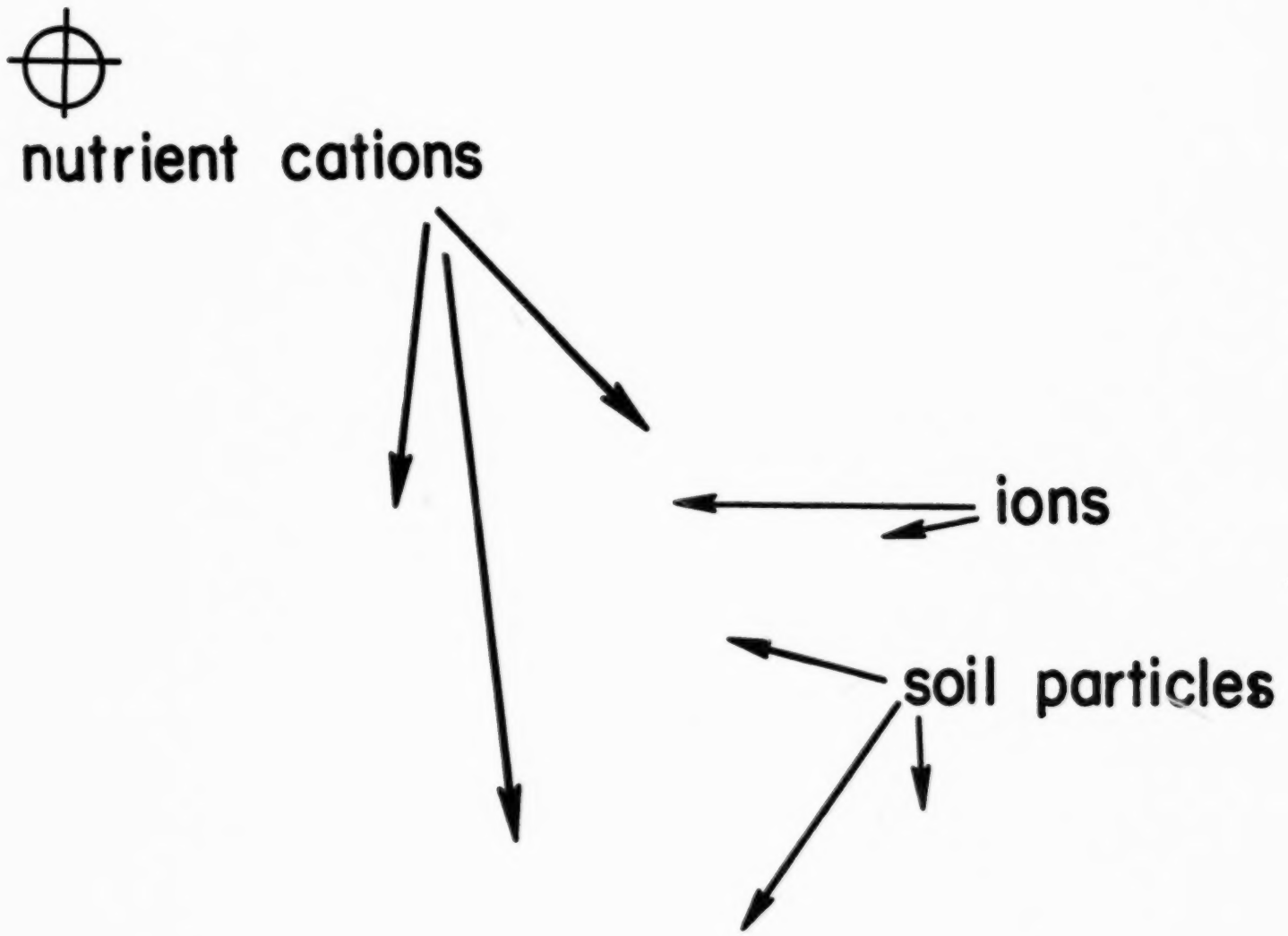
OPTIMUM
WATER

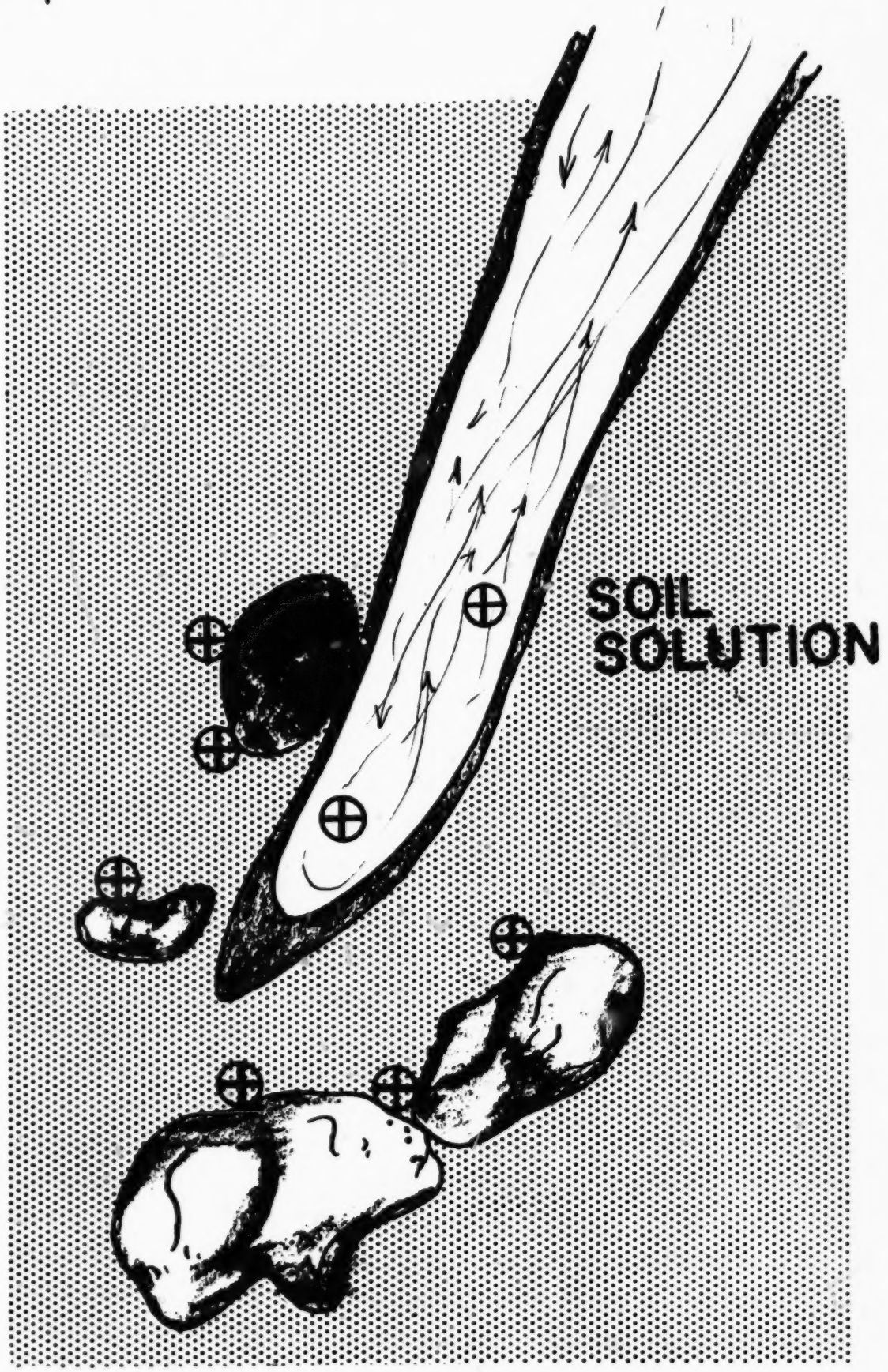
OPTIMUM
NUTRIENTS



ROOT HAIRS IN SOIL




nutrient cations
ions
soil particles
root hair

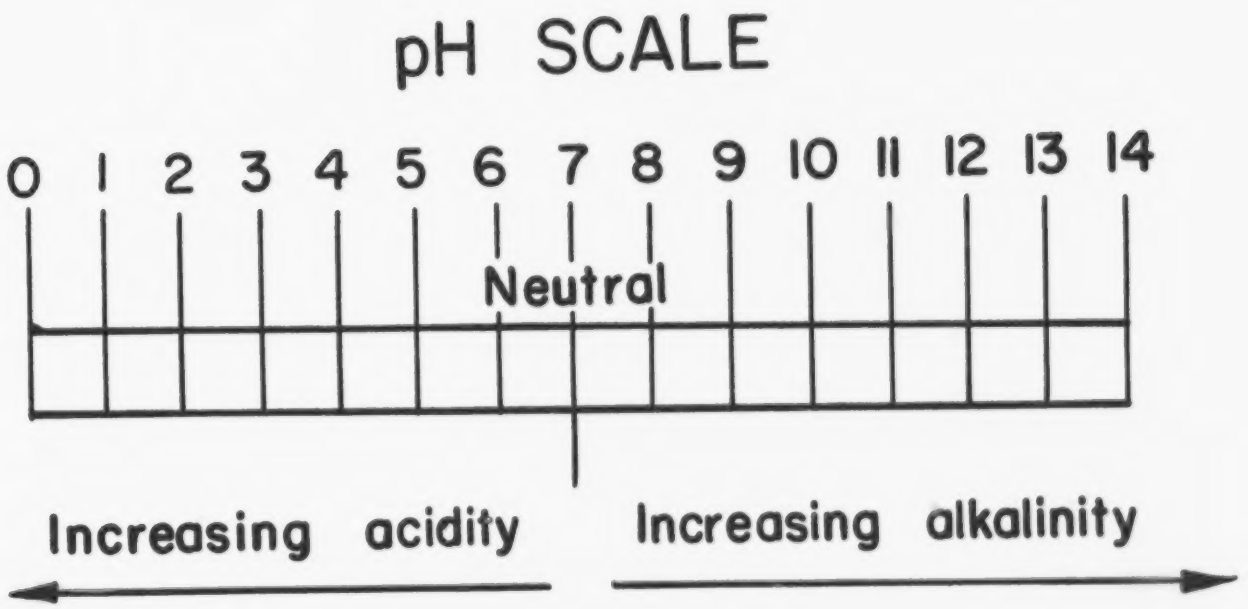

SOIL
SOLUTION

SOIL
SOLUTION

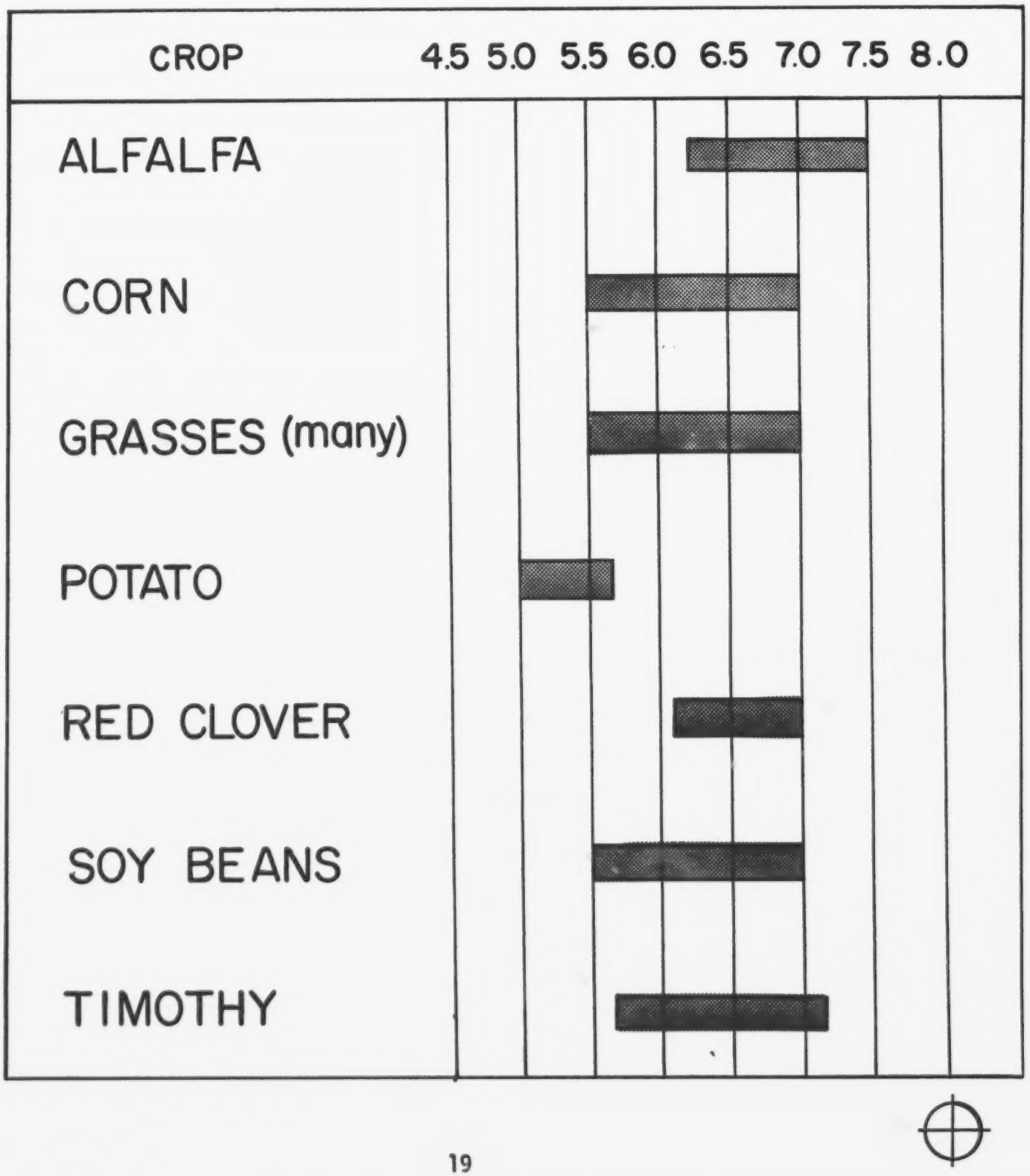
ROOT HAIR

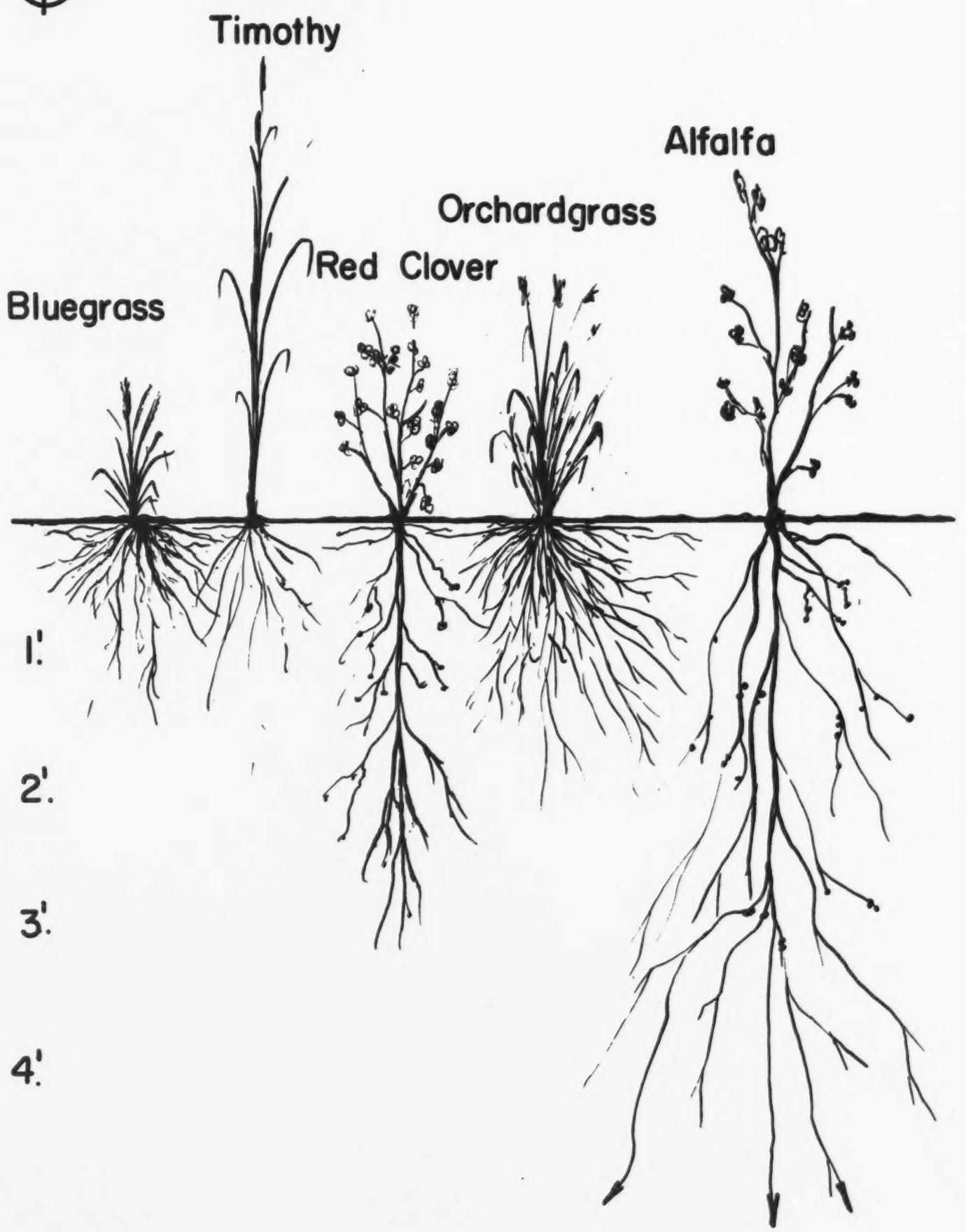
SOIL PARTICLE

CATIONS

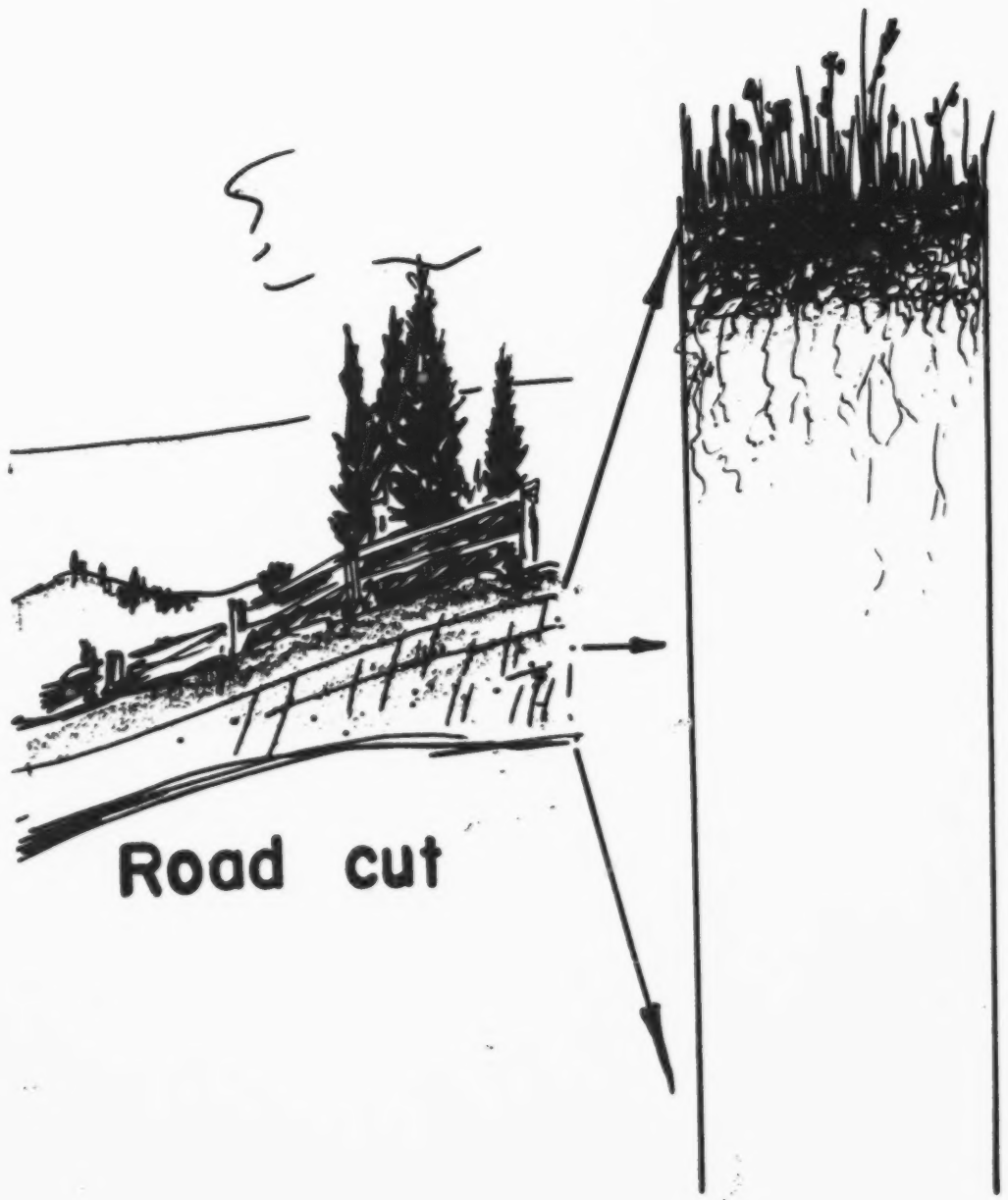

pH SCALE
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
Neutral
Increasing acidity
Increasing alkalinity

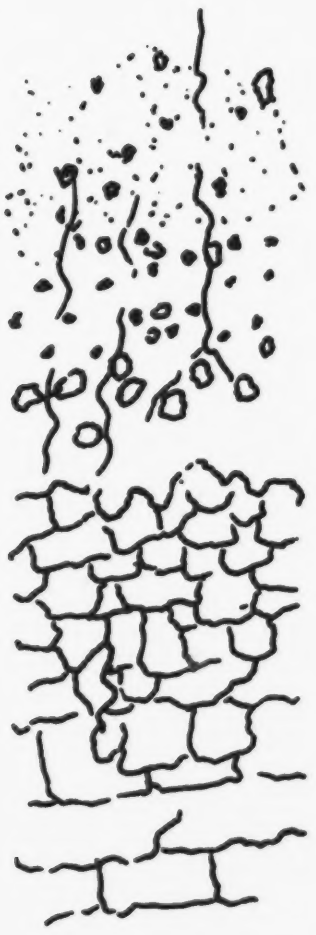
pH REQUIREMENTS OF CROPS




Timothy
Alfalfa
Orchardgrass
Red Clover
Bluegrass
1'.
2'.
3'.
4'.

SOIL PROFILE





B Horizon

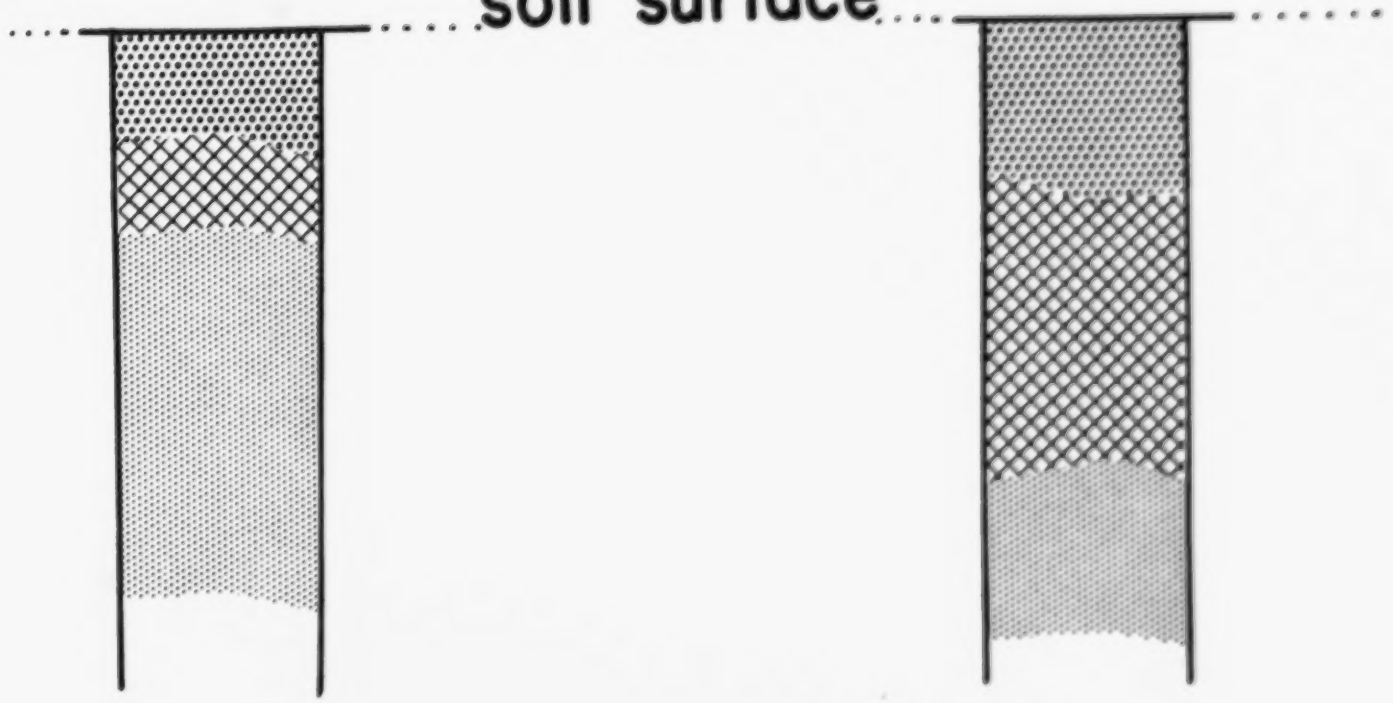
SUBSOIL

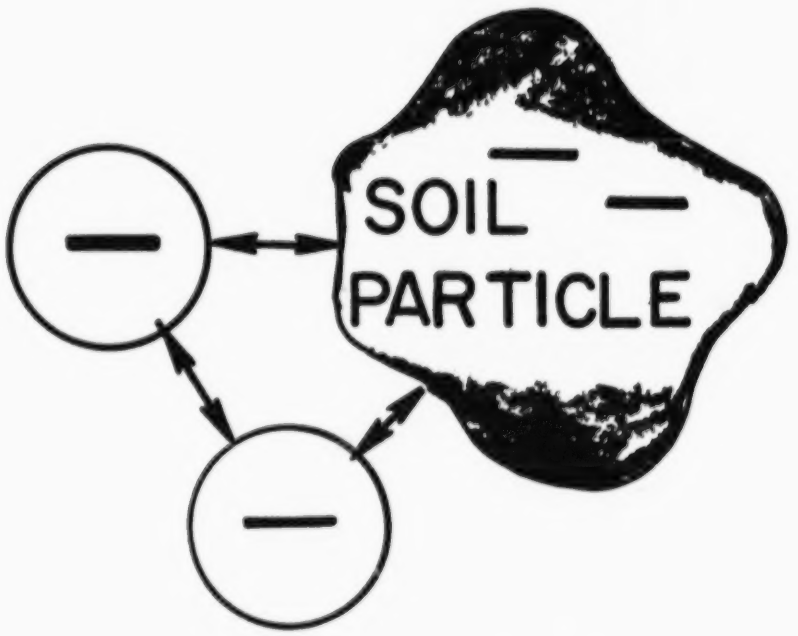
C Horizon

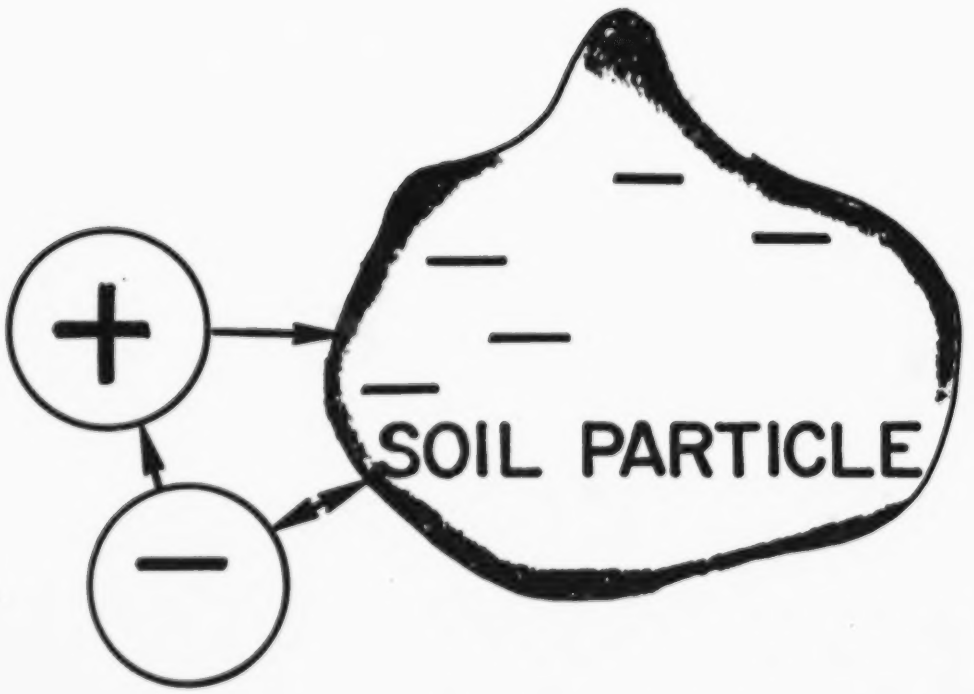
PARENT MATERIAL

BEDROCK

SOIL PROFILES





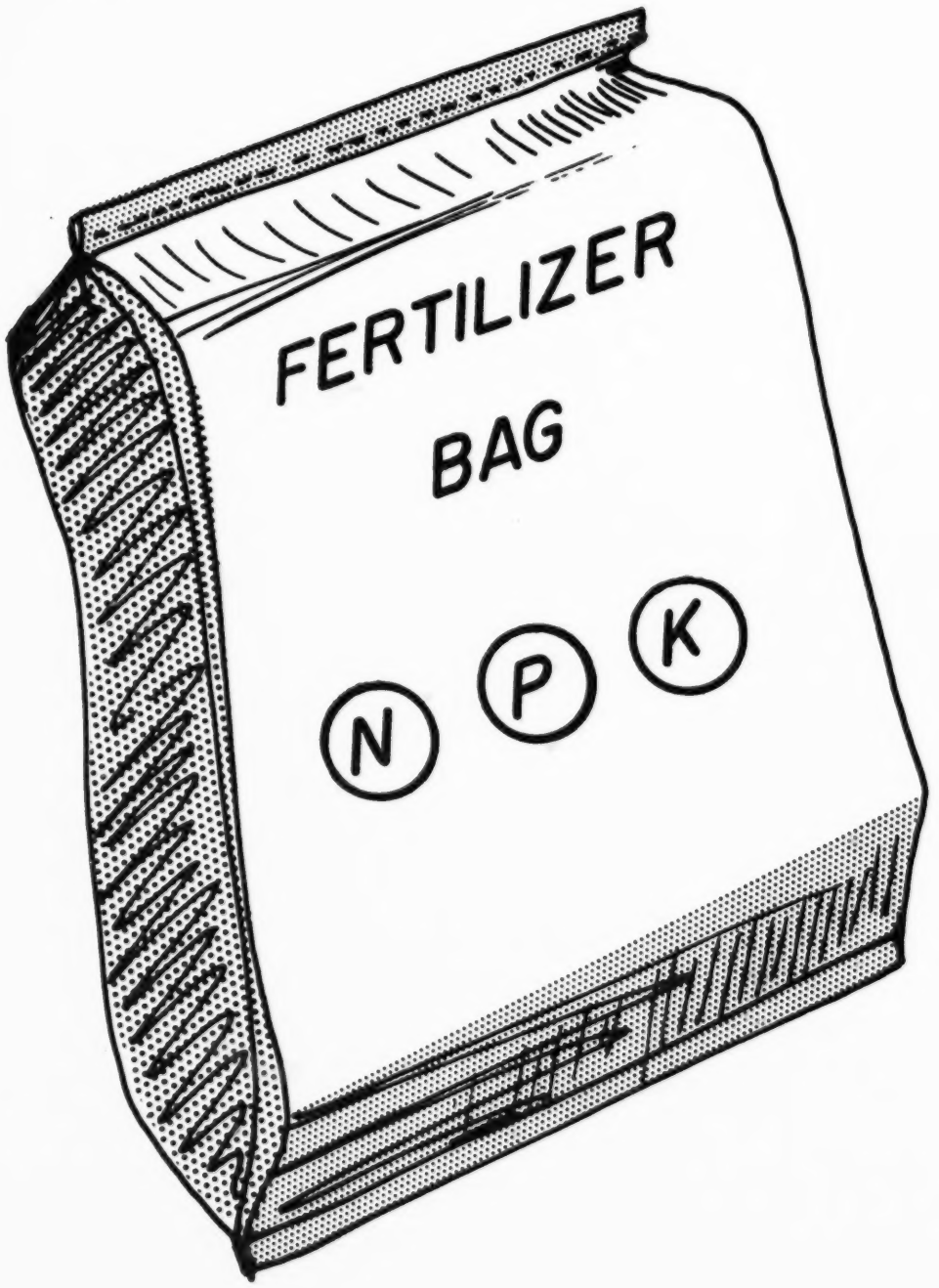


Soil Particles And Ions

ions and soil particles with like charges repel each other

cation →

anion →


FERTILIZER
BAG
N
P
K

PRIMARY PLANT NUTRIENTS

1.

2.

3.

N Nitrogen

P Phosphorus

K Potassium

(N)

NITROGEN

1. Dark green
2. Rapid growth
3. Increases yields
4. Increases protein
5. Feeds micro-organisms

(P)

PHOSPHORUS

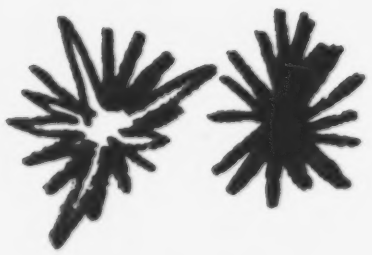
1. Early root formation
2. Rapid vigorous start
3. Hastens maturity
4. Stimulates blooming
5. Winter hardiness
6. Important to germinate
7. Conversion of sugar

(K)

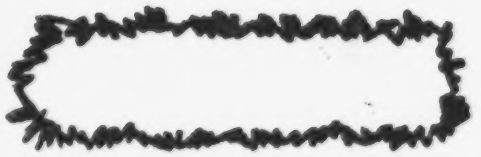
POTASSIUM

1. Vigor, disease resistance
2. Stiff stalks
3. Plump seed
4. Transfer of nutrients
5. Winter hardiness

TREES

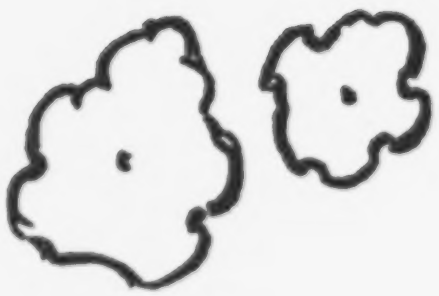


SHRUBS



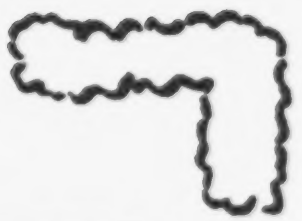
HEDGE

EVERGREEN



TREES

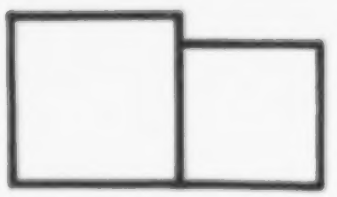
SHRUBS



HEDGE

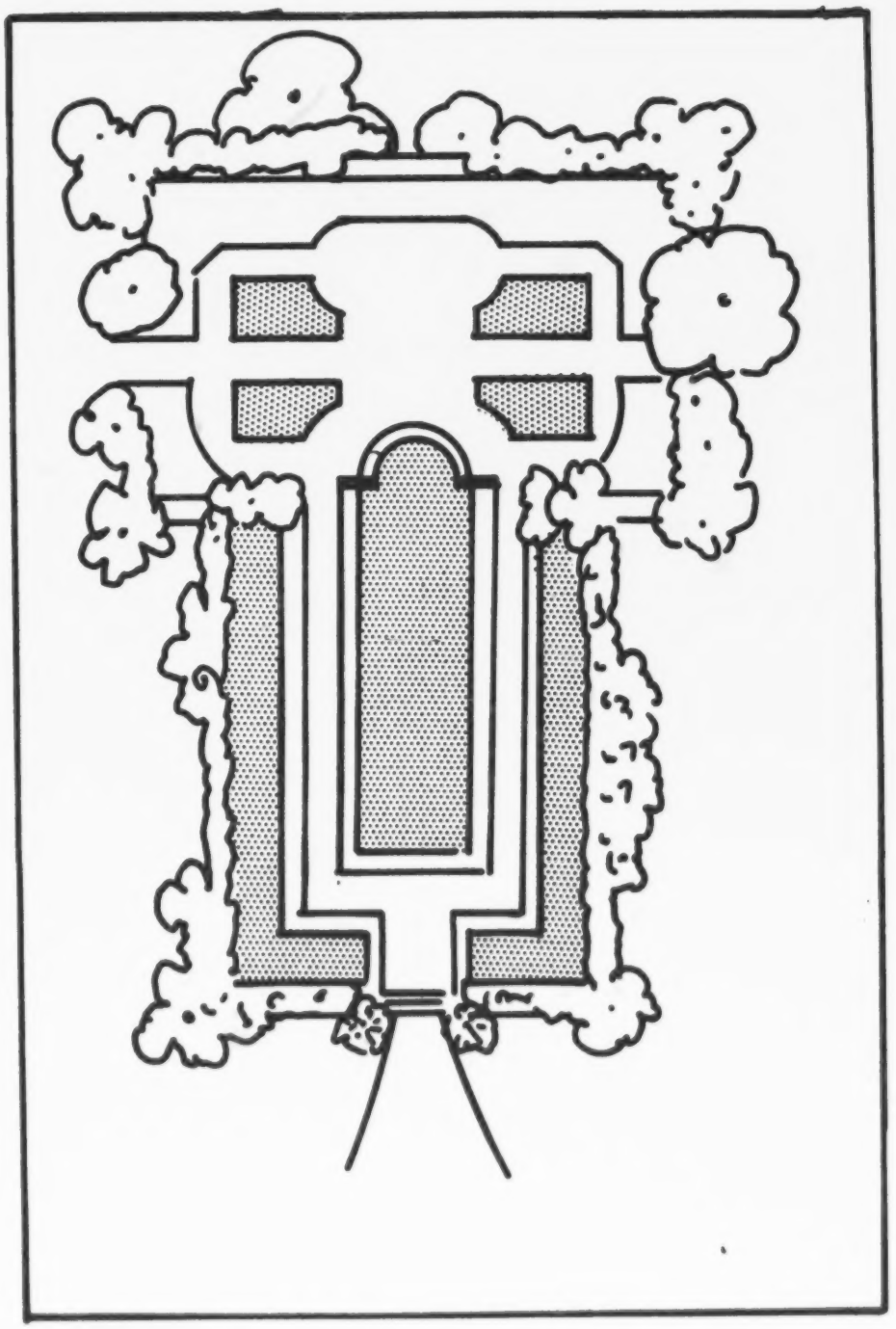
DECIDUOUS

FENCE



BUILDING

SYMBOLS USED FOR LANDSCAPE



FORMAL GARDEN

PRUNING

This master transparency is from An Introduction To The Pruning of Fruit Trees, William A. Luce and Phil Jenkins, Published by the Washington State Board for Vocational Education, 1964.

Suggested Uses:

1. Used with the overlays it makes a good base on which to discuss the basic parts of a fruit tree.

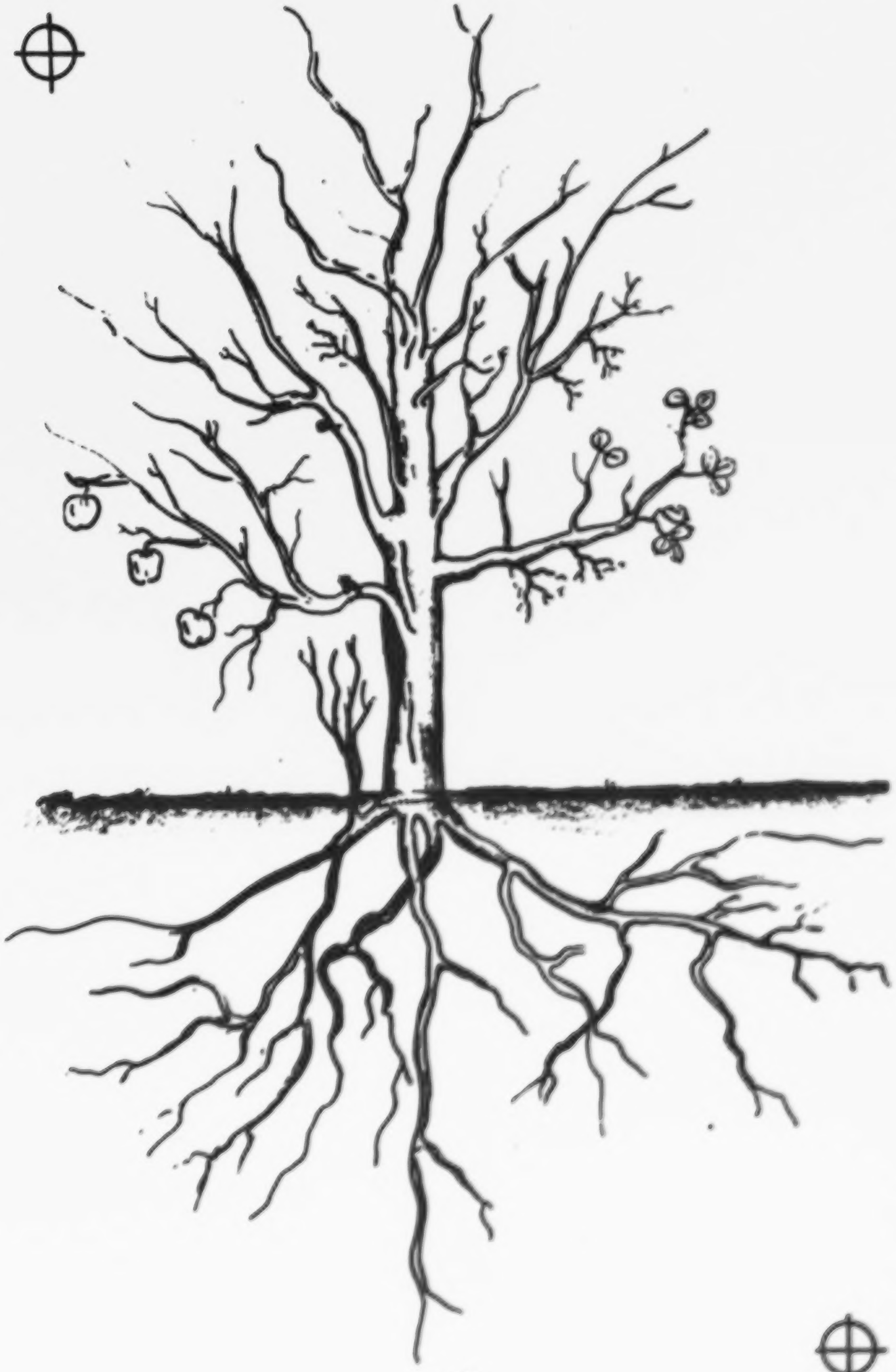
2. For the development of a basic vocabulary to be used in further study of pruning and training of fruit trees.

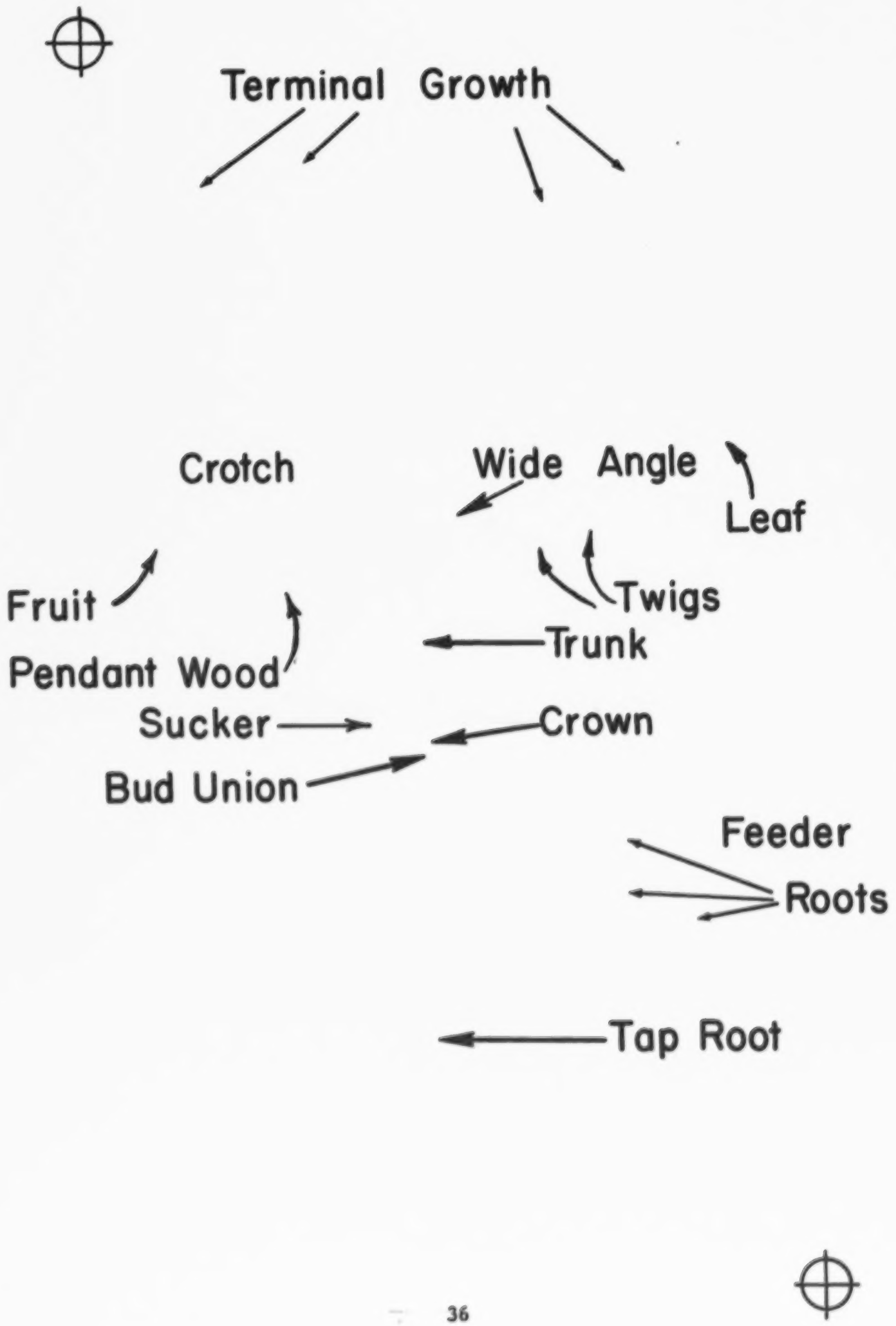
3. Used with a list of numbers and numbered overlay it can be used as an objective test to check students on vocabulary.

4. Can be used to discuss the flow of nutrients from the soil or to the soil.

5. Can be used as an aid to the discussion of transpiration.

6. With the use of a wax pencil it can be used to discuss the pruning of trees.




Terminal Growth
Crotch
Wide Angle
Leaf
Fruit
Twigs
Trunk
Pendant Wood
Sucker
Crown
Bud Union
Feeder
Roots
Tap Root

PRUNING

The following ten masters are based upon the Washington State University Extension Bulletin No. 552, Training Young Apple Trees, December 1957.

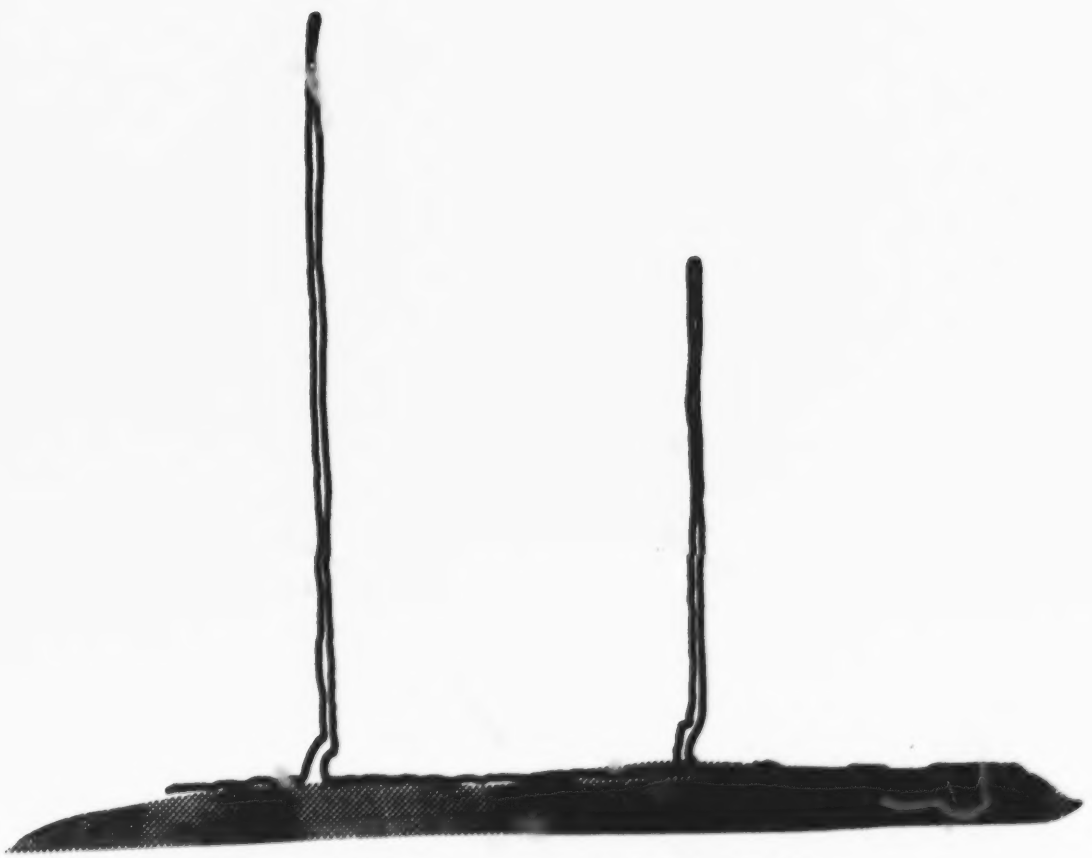
Suggested Uses:

1. Each basic transparency with its appropriate overlay can be used in presenting the growth and training of apple trees for the first four years.

2. This series will make a good series for student report or demonstration.

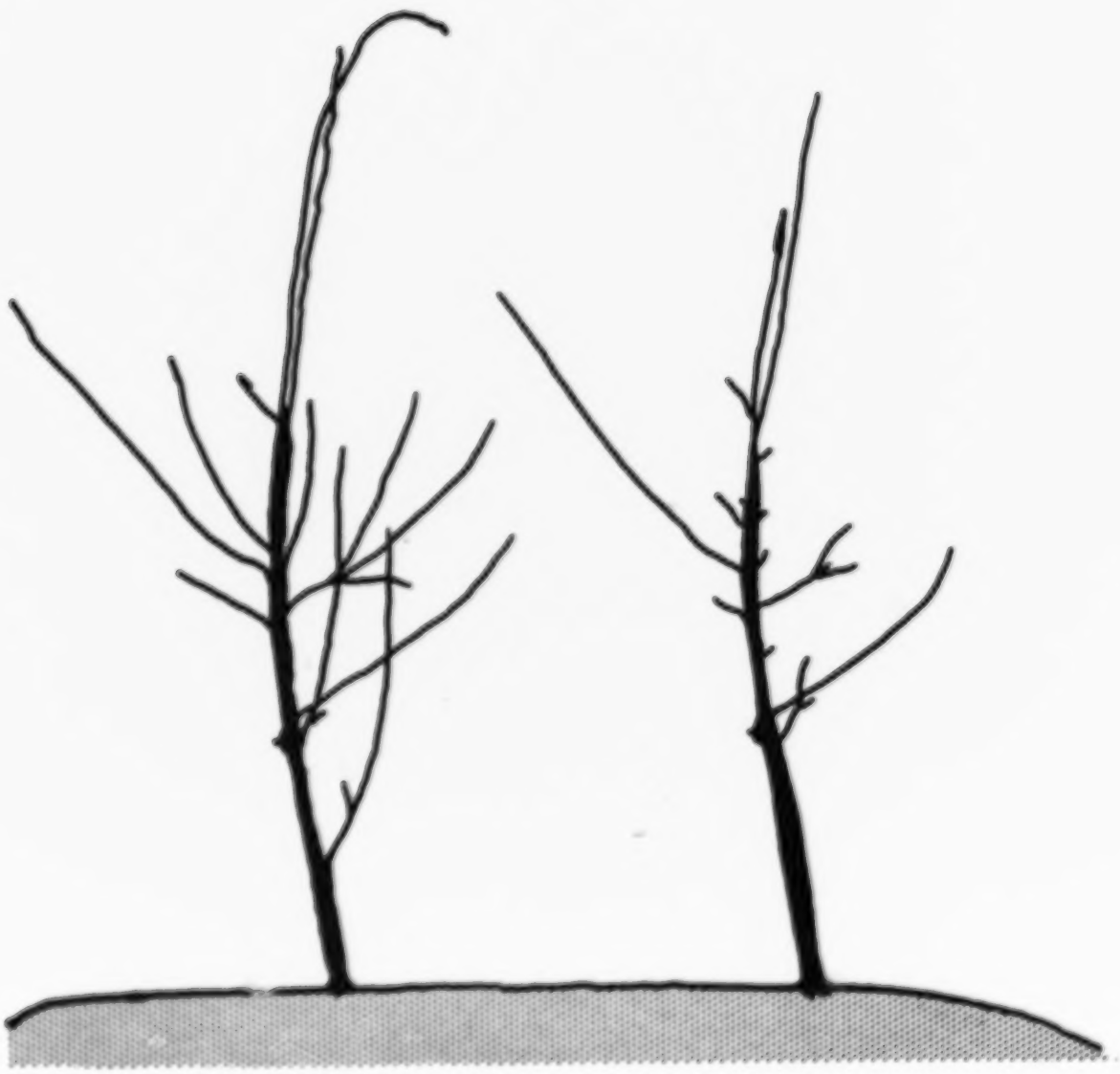
3. This series can be used by the teacher as visual material to augment speeches to public groups.

4. These masters, when reproduced as transparencies, can be traced on charts or on the blackboard.



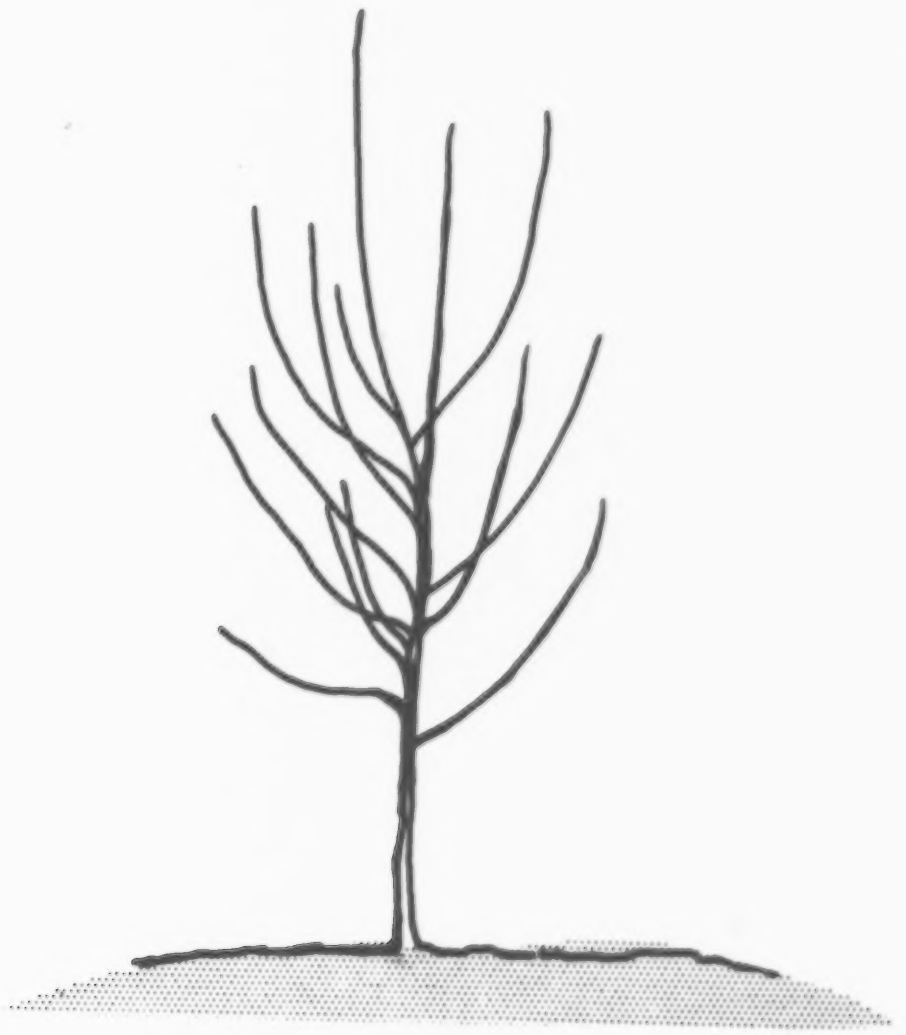
BEFORE AFTER

DORMANT HEADING



BEFORE PRUNING AFTER PRUNING

ONE YEAR OLD APPLE TREE
WITH DELAYED HEADING AND
STUBBING OF SURPLUS BRANCHES

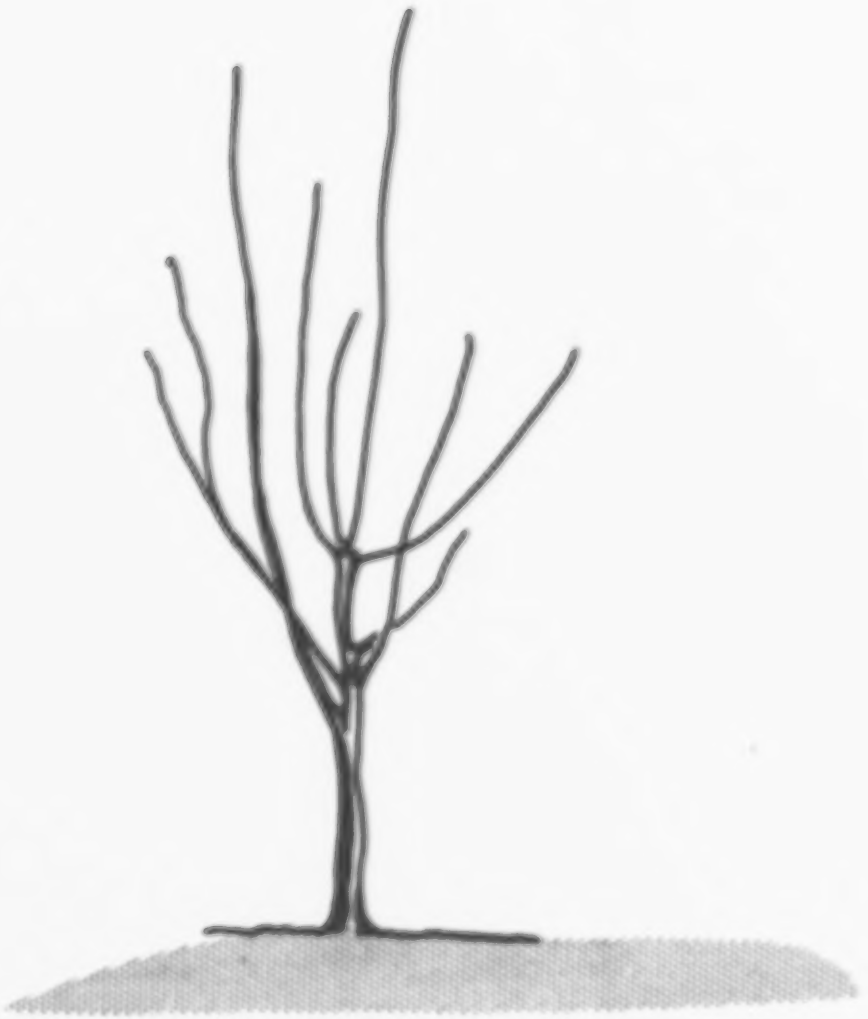


PRUNED

ONE YEAR OLD APPLE

WITH DELAYED HEADING

BEFORE



PRUNED
TWO YEAR OLD APPLE WITH
DORMANT HEADING ONLY

BEFORE

PRUNED

THREE YEAR OLD APPLE WITH
CENTRAL LEADER HEADED BACK

BEFORE

PRUNING

The following six transparency masters are based upon the Washington State University Extension Bulletin No. 381 published October, 1964, Pruning Apple and Pear Trees.

Suggested Uses:

1. To be used as a series of pictures to discuss the structure of apple and pear trees.

2. To be used as a supplement to the Extension Bulletin No. 381 when the material is covered in class discussion.

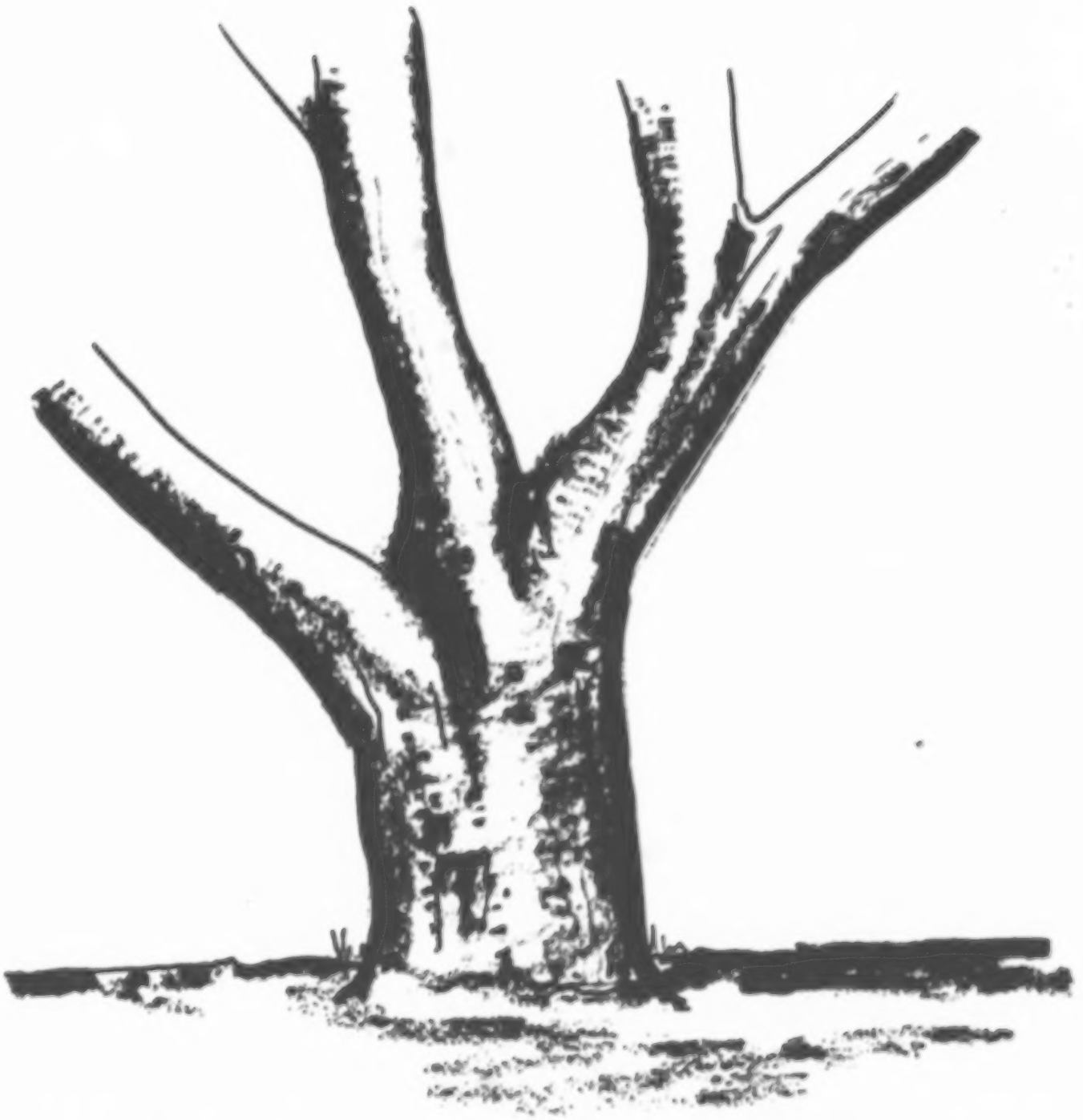
3. To be used as a review of the material after the unit in pruning has been covered.

4. As basic test material with the addition of an overlay of item numbers or with a wax pencil overlay of the items to be remembered.

5. As visual material for a demonstration by the teacher or a student.

6. As visual material for public speech.

7. To be projected on a blackboard to be traced for the basic form and with the addition of material which the teacher can supply from his own resources.



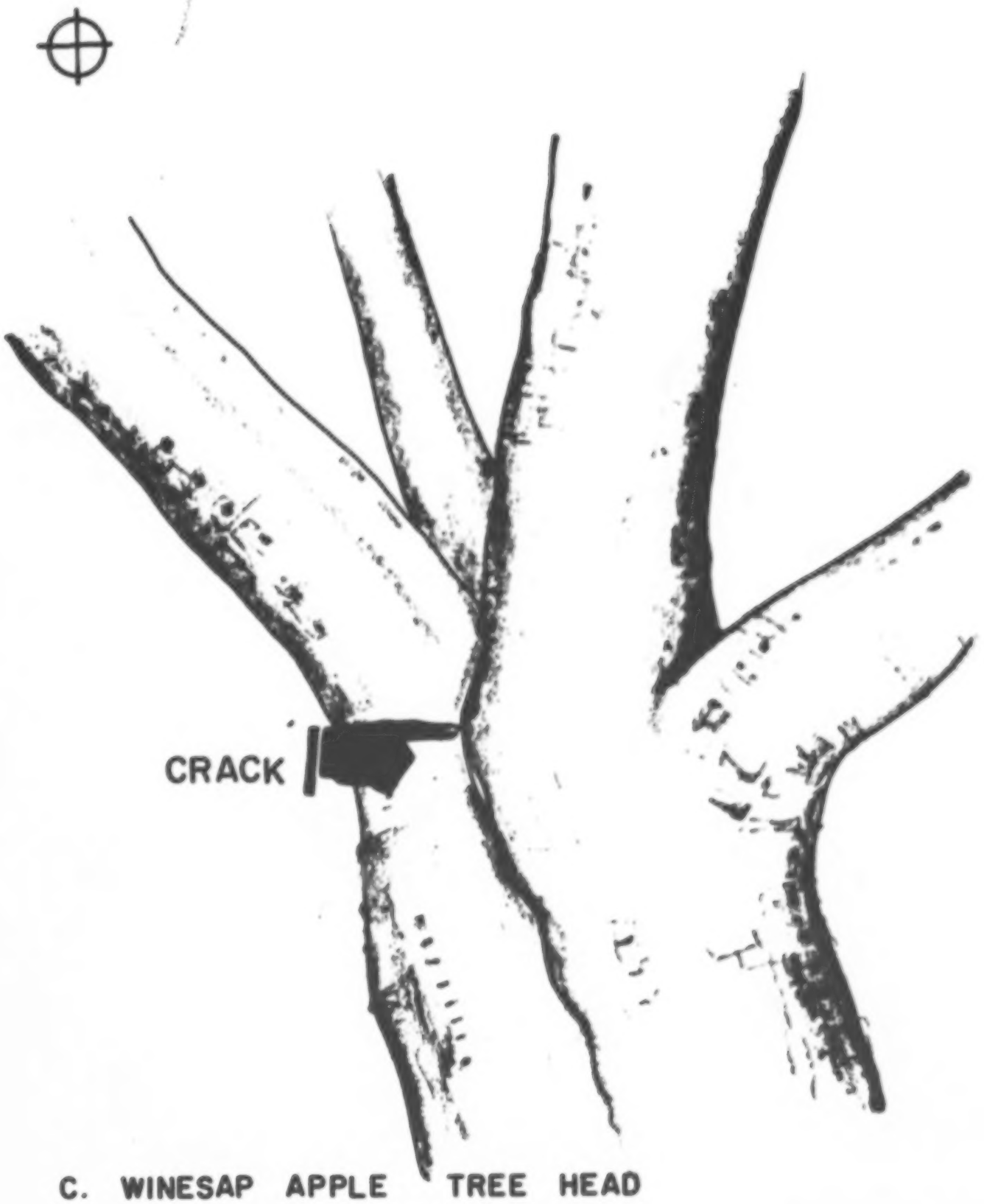
A. DELICIOUS WITH THREE WELL-ATTACHED LEADERS

1. A Delicious apple tree with three well attached leaders. With no surplus branches there will never be any occasion for making a dangerous wound in the tree head.

B. A THREE-LEADER DELICIOUS 40 YEARS OLD

A three-leader tree in which the leaders were established early.

Note that even though the tree is about 40 years old the leaders are not crowding each other.



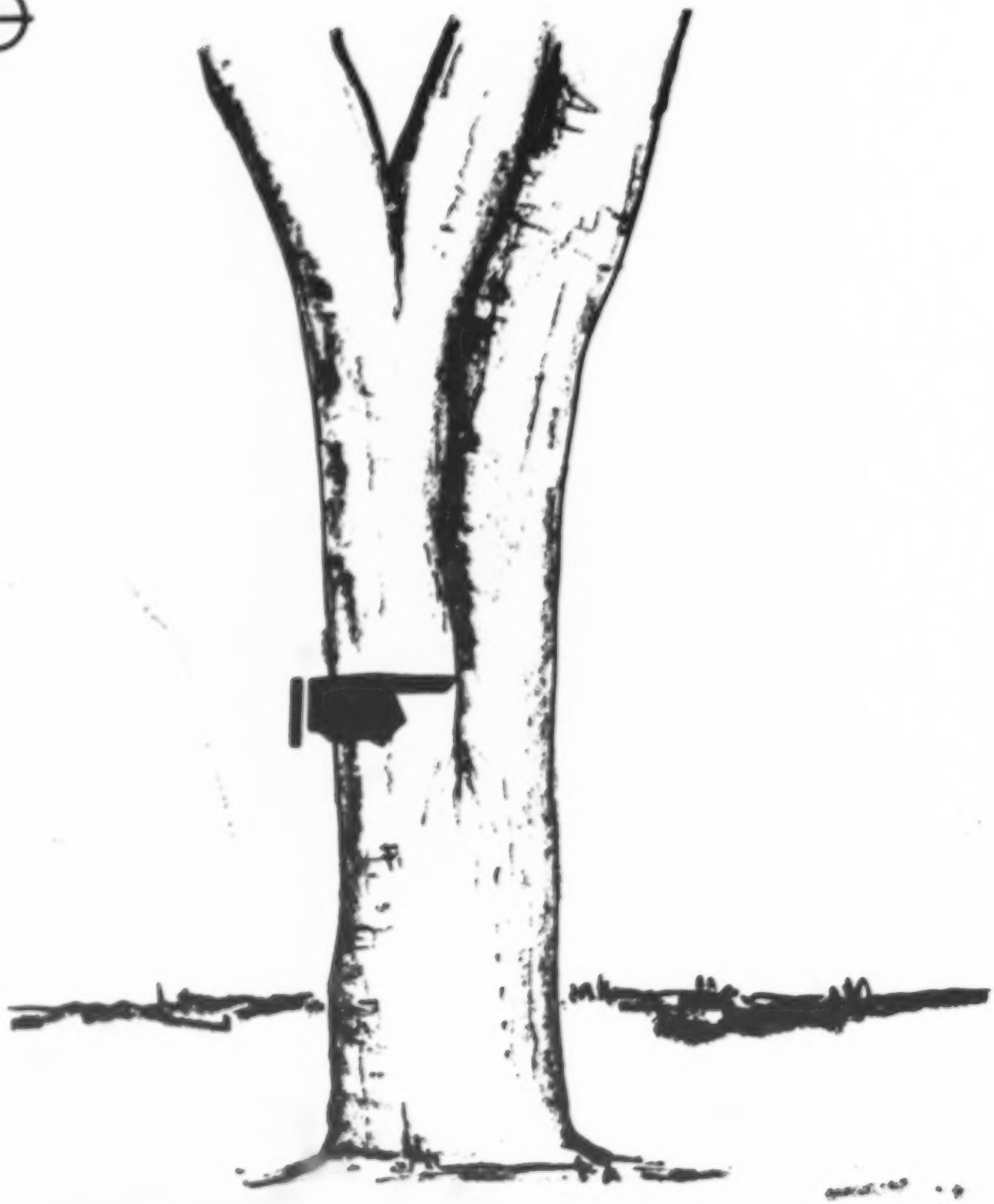
C. WINESAP APPLE TREE HEAD

A narrow crotch led to the development of the crack. This tree can no longer carry a crop without special bracing.

Eliminating weak crotches when the tree is young, even as the expense of delaying bearing a year or two, is better than trying to remedy the results of weak crotches in later years.

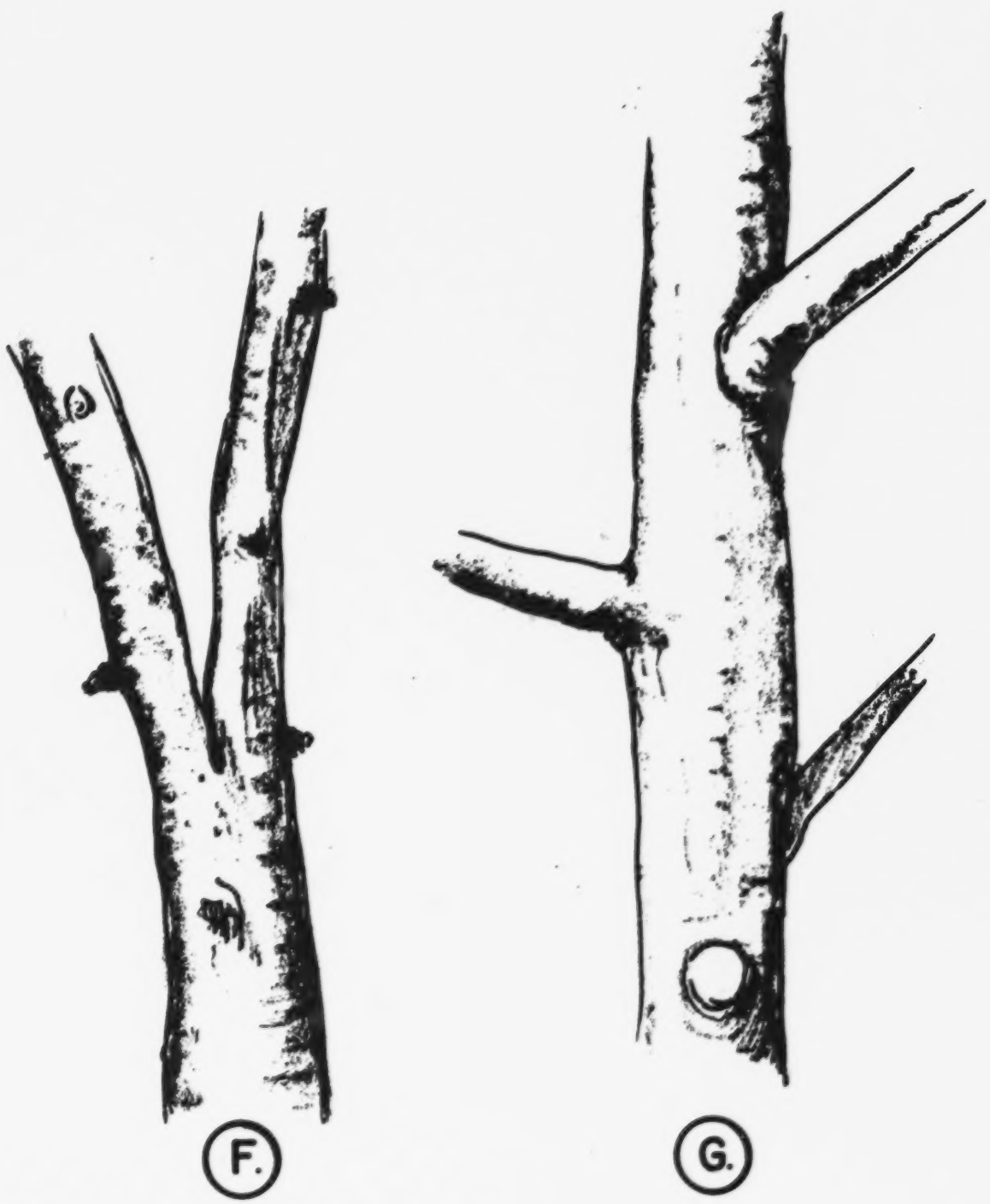
D. RESULT OF WEAK CROTCHES

1. A winesap apple tree showing the results of a tree head with weak crotches. Faulty training is costly.



E. ROME BEAUTY WITH A NARROW CROTCH

E. There is no sign of breakage yet but the fact that the supporting tissue on the inside of the crotch can no longer develop normally is sure to lead to a splitting tree. At this late date, it is difficult to remove the one branch, but there is no alternative.



F. GOLDEN DELICIOUS WEAK CROTCH

G. GOLDEN DELICIOUS VERY STRONG CROTCH

F. Note that although the crotch has not yet started to split, there is little room for the branches to expand on the inside. Extreme pressure and severe wedging is inevitable.

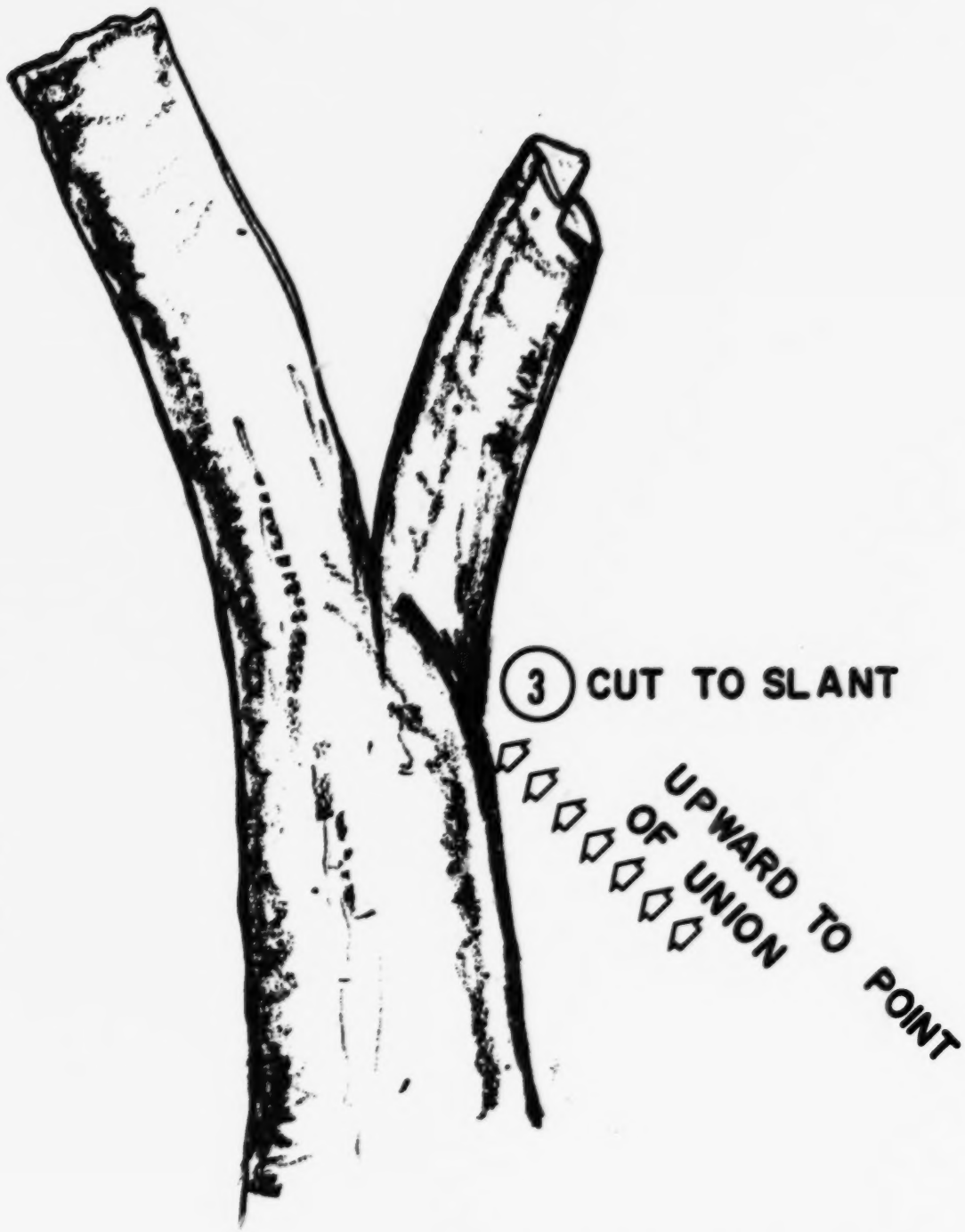
G. Note that the secondary branch forms practically a 90° angle with the main branch.

WEAK CROTCH

MIDDLE CROWDED

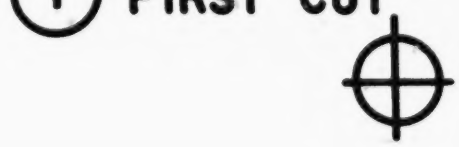
EXCELLENT ANGLE

POOR METHOD TO PRUNE LARGE LIMB



PROPER PROCEDURE IN PRUNING CROTCH

Cut along line

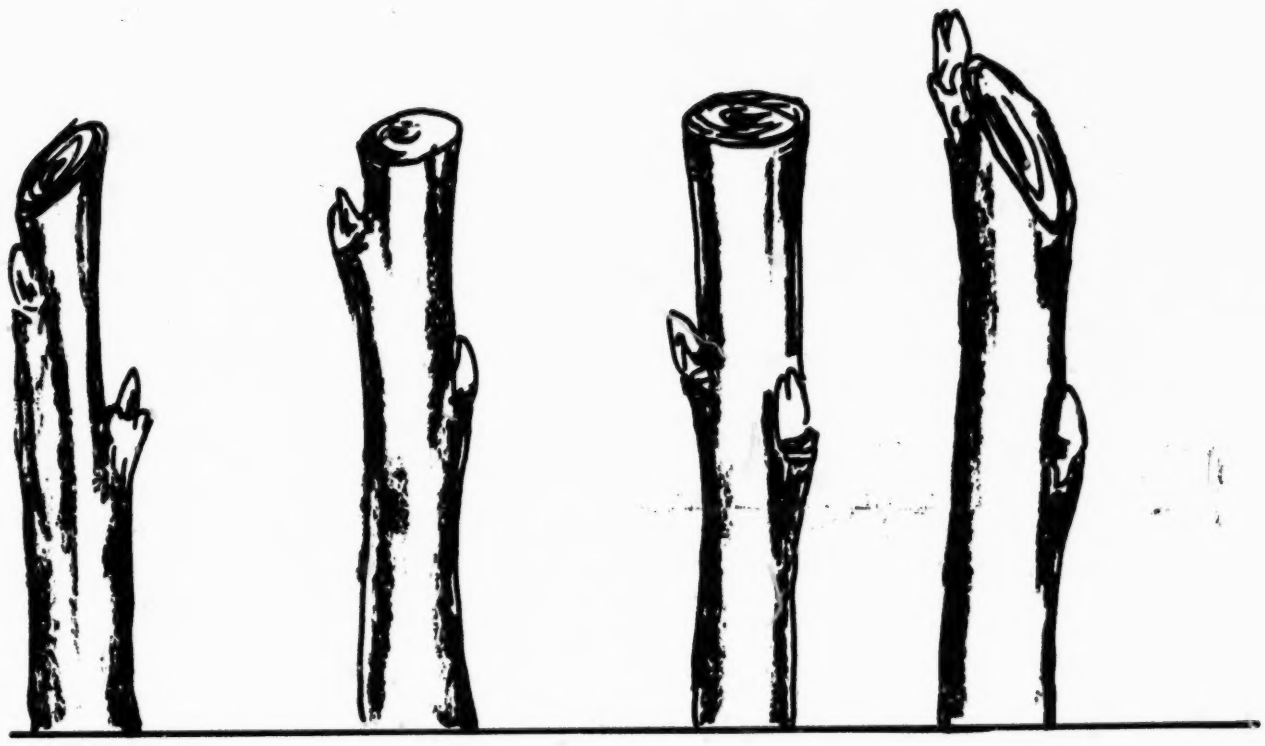


POOR METHOD TO PRUNE LARGE LIMB

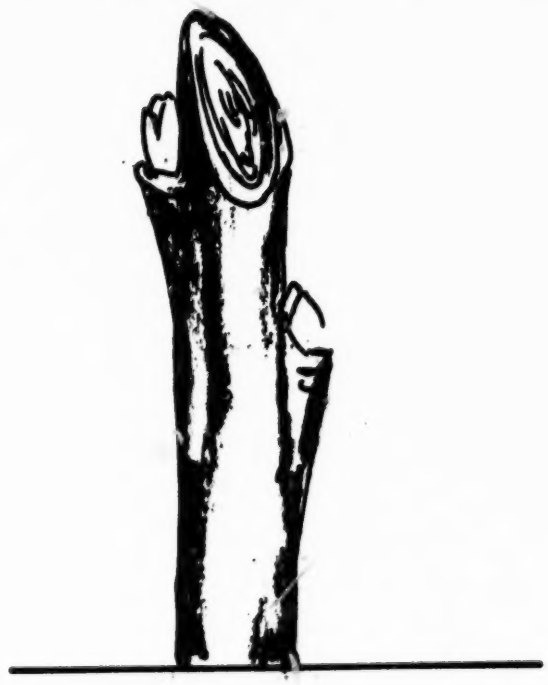
PRUNING

The discussion of tree structure and pruning techniques can be improved with the use of these transparencies.

This material is from the Texas Agricultural Extension Service Bulletin, Modern Pruning Methods, Texas Station, Texas.

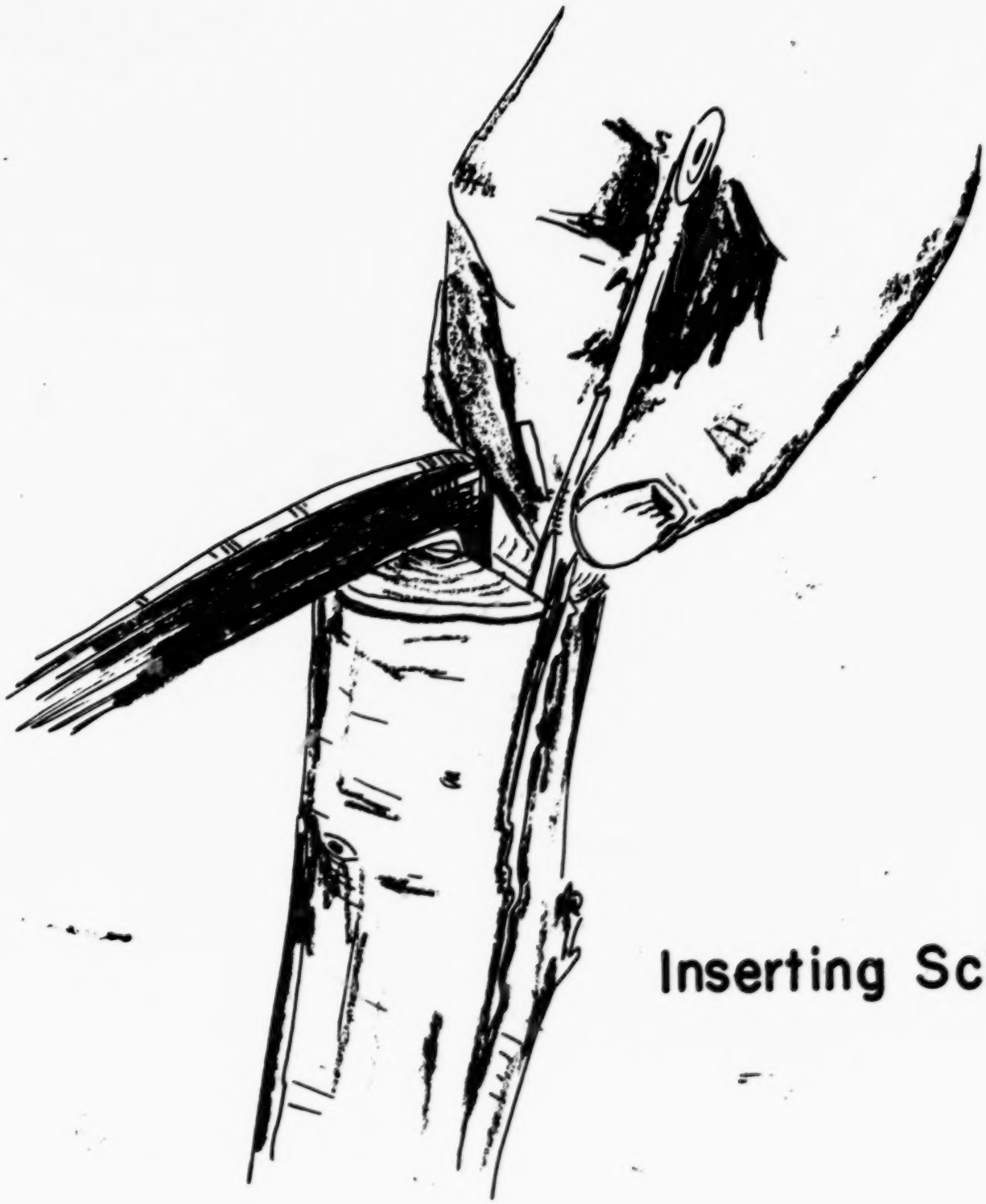


INCORRECT METHODS



CORRECT

Use PRUNING-WOUND DRESSING



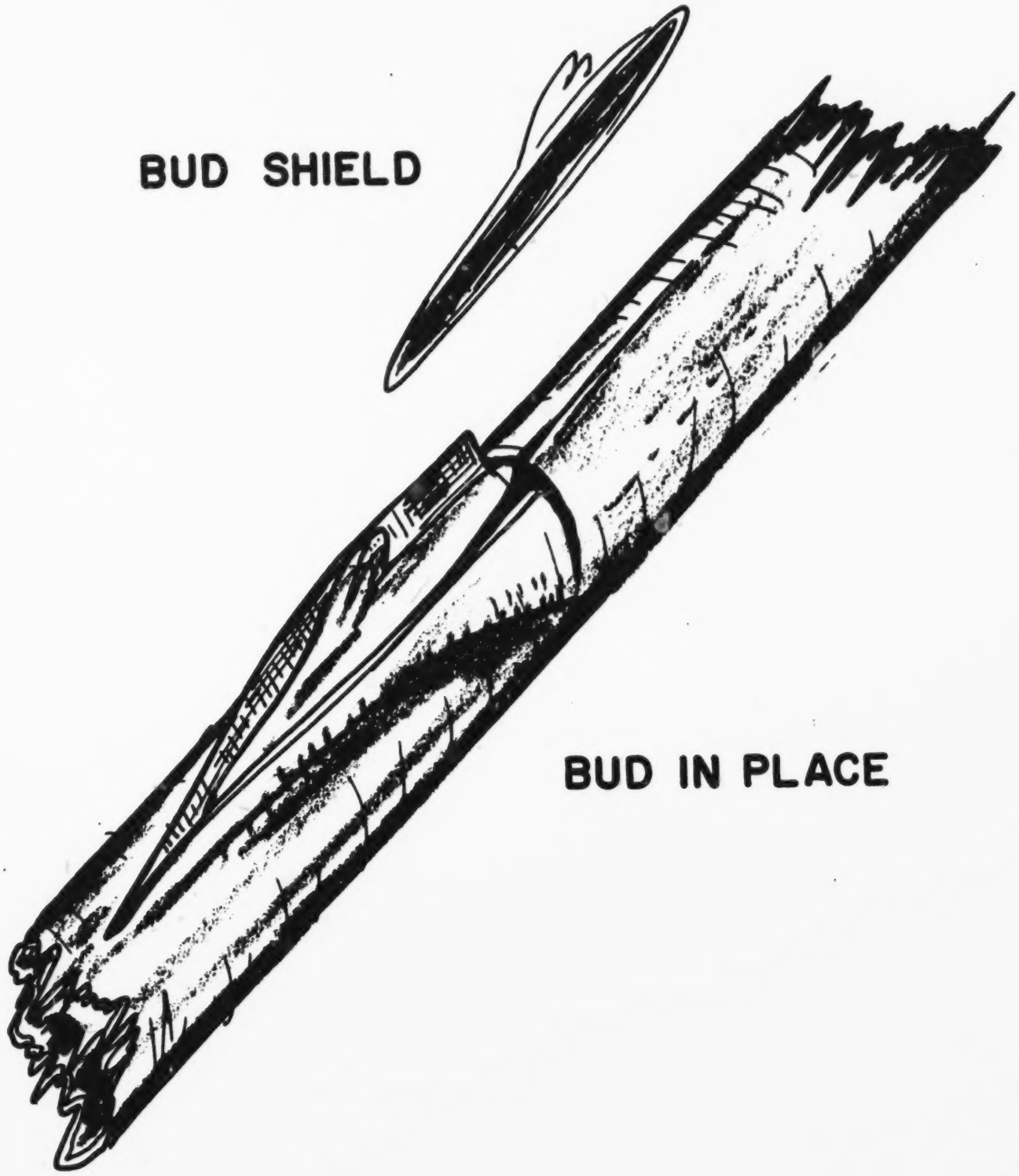
Inserting Scion

CLEFT GRAFT READY FOR WAX

Wrapping WHIP GRAFT

Cut for WHIP GRAFT

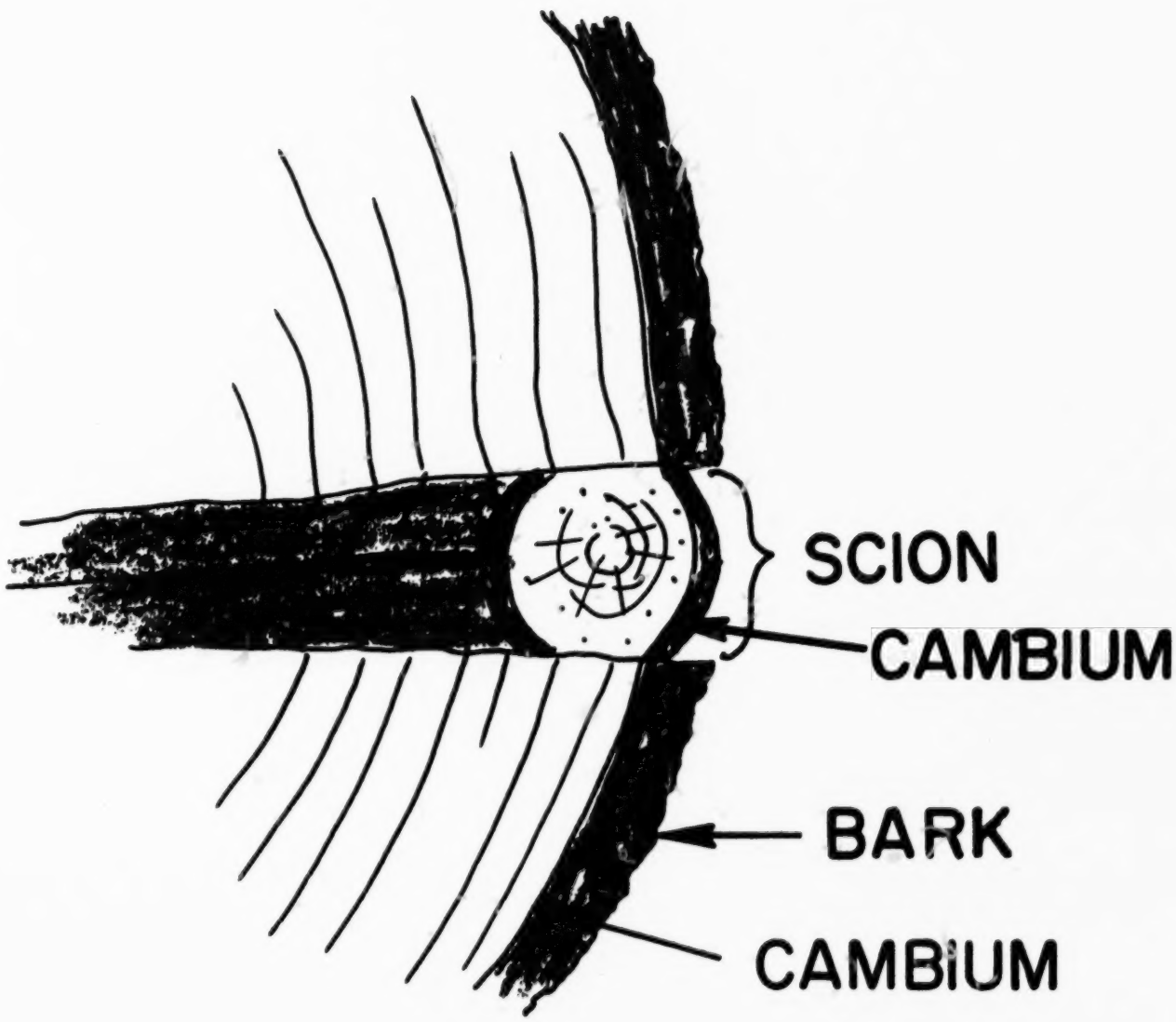
BUD SHIELD



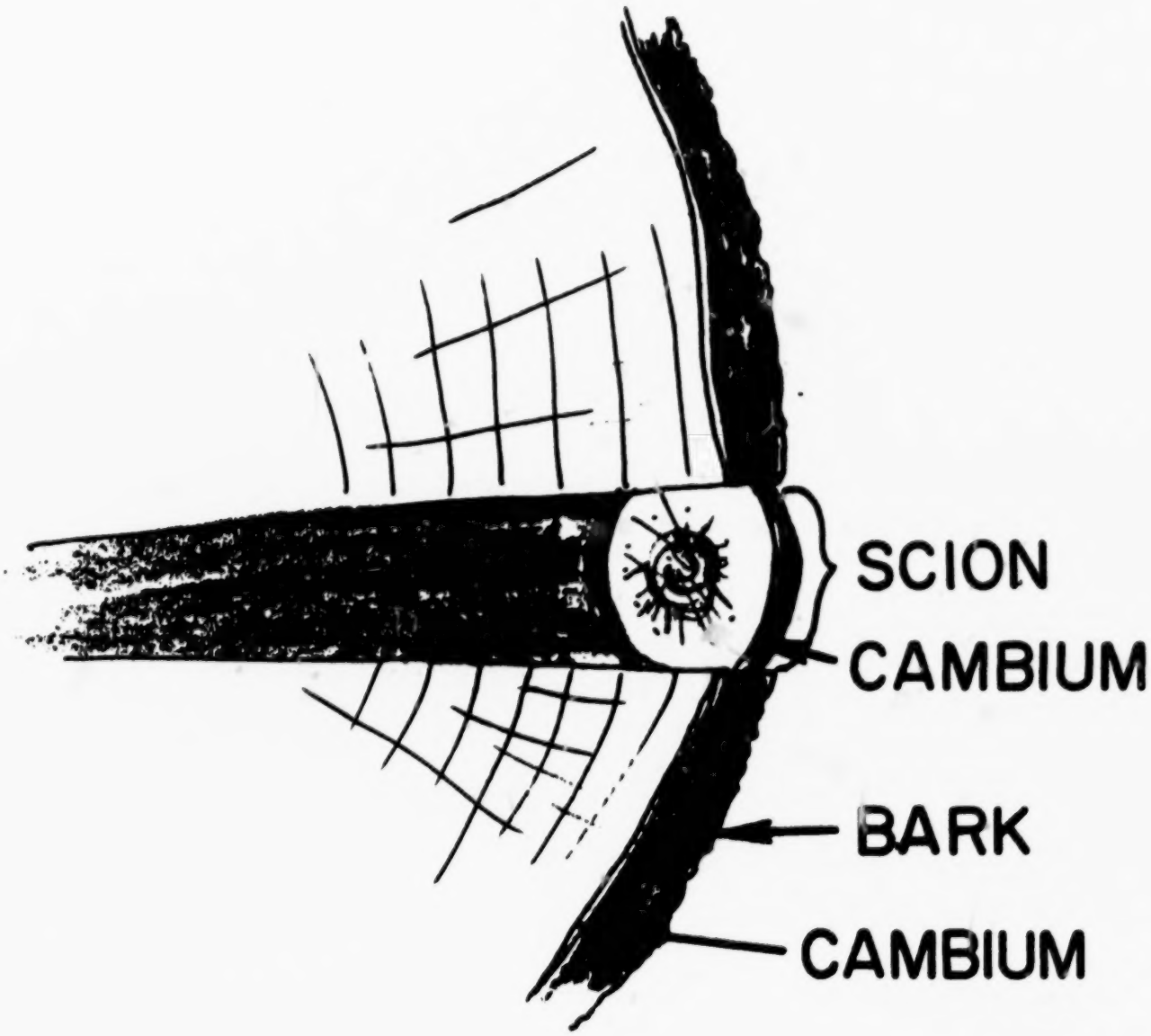
BUD IN PLACE

WRAP BUD

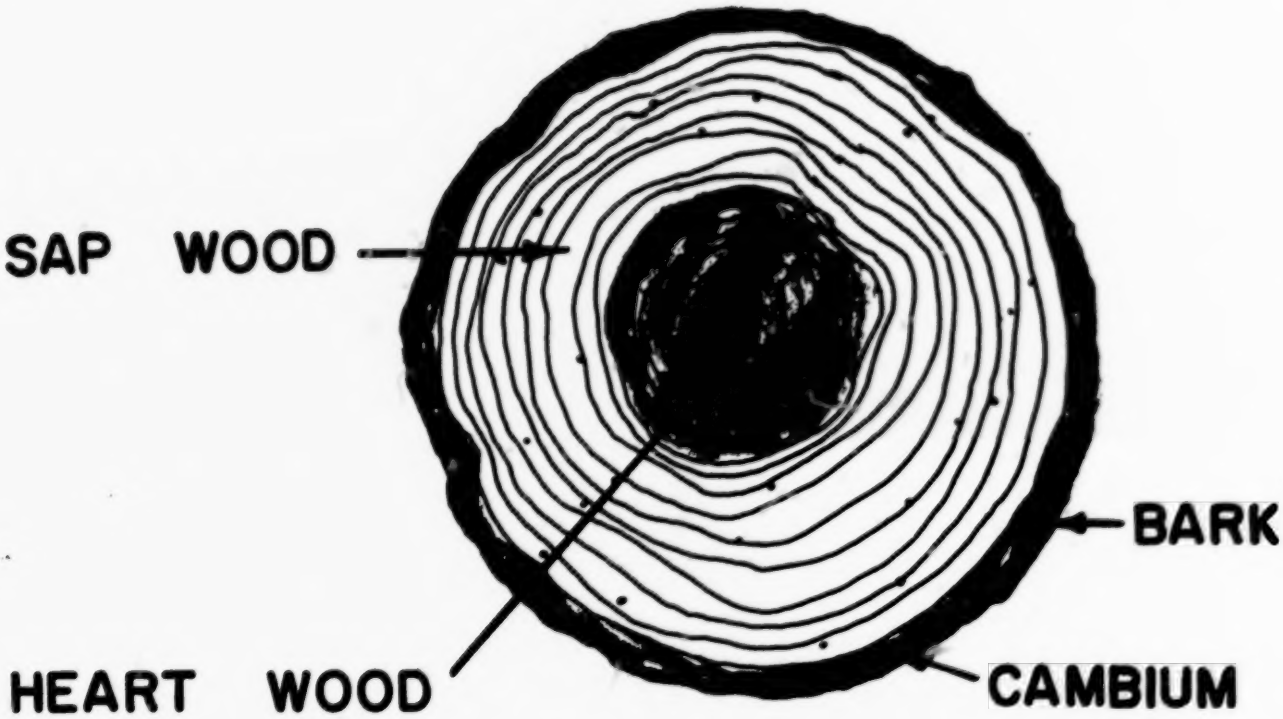
Wrap Bud — Tie



MATCHED CAMBIAL CELLS

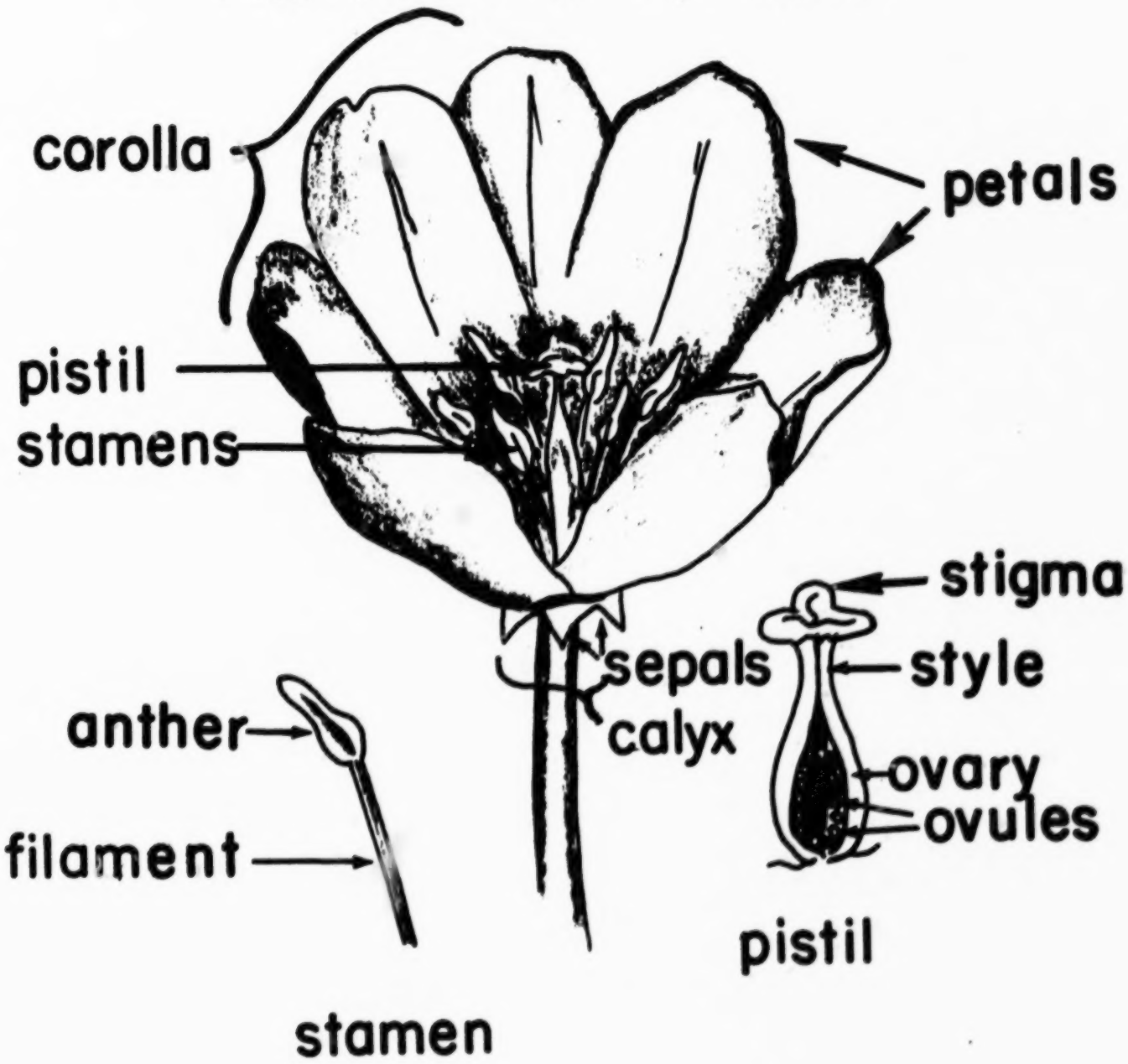


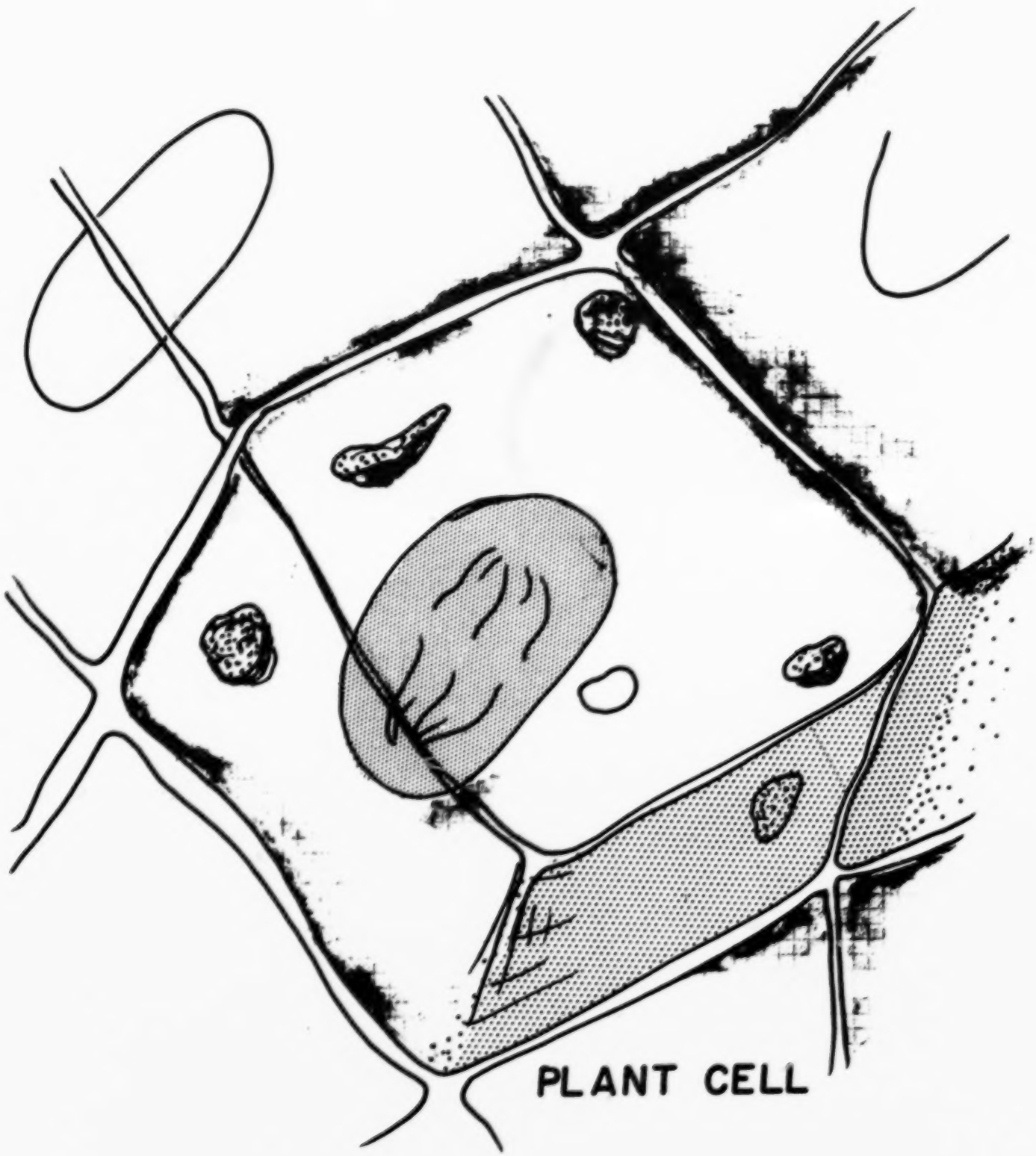
POORLY MATCHED CAMBIAL CELLS


SAP WOOD
BARK
HEART WOOD
CAMBIUM

Red Clover

The Parts of a Flower



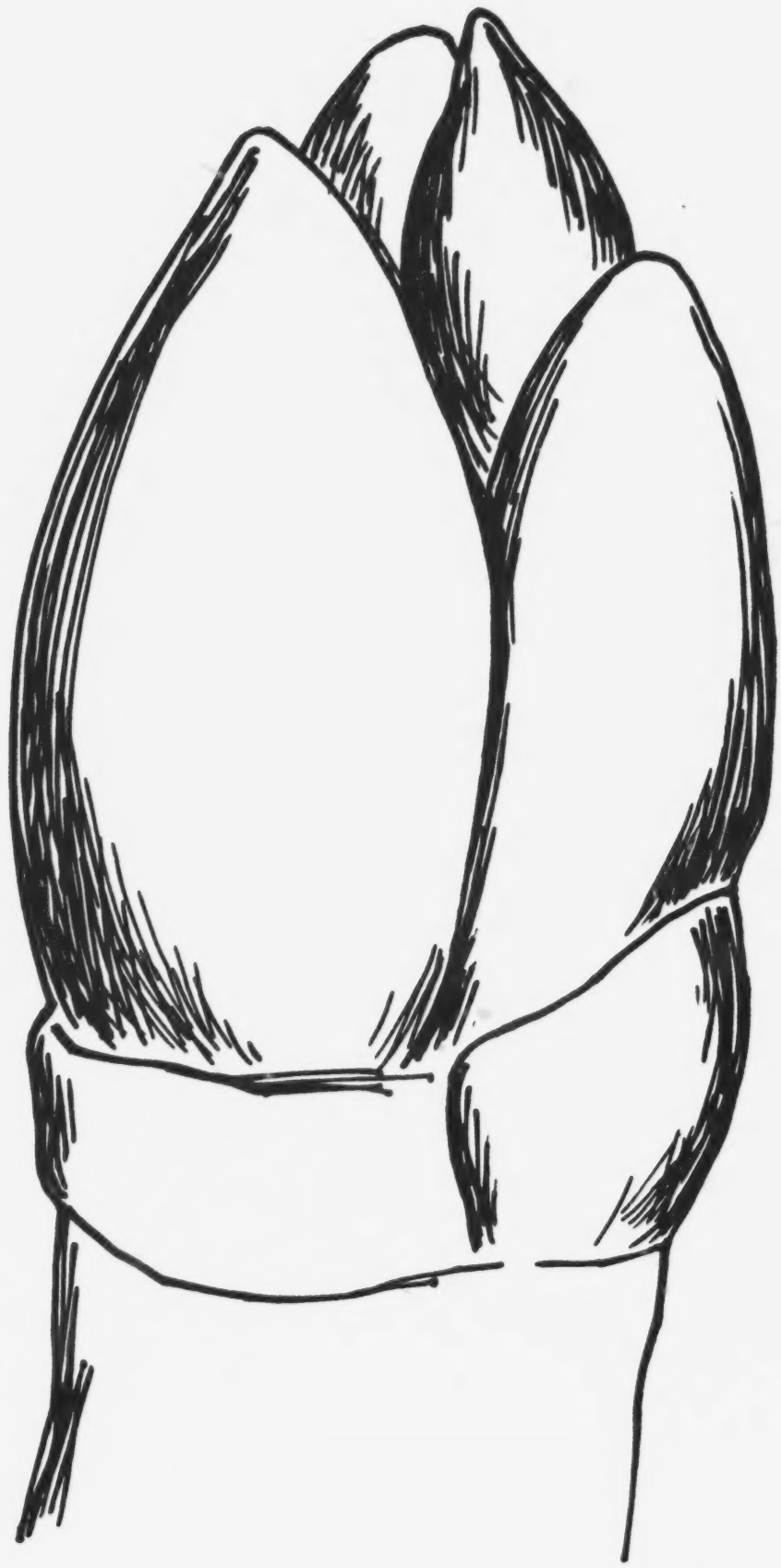

PLANT CELL

HORTICULTURE

This material is from Washington State University Extension service Bulletin No. 419, January 1966.

Suggested Use:

1. These transparencies of the development of an apple fruit spur from bud to blossom can be used as a series to aid in identification of timing for spraying.



Dormant Bud

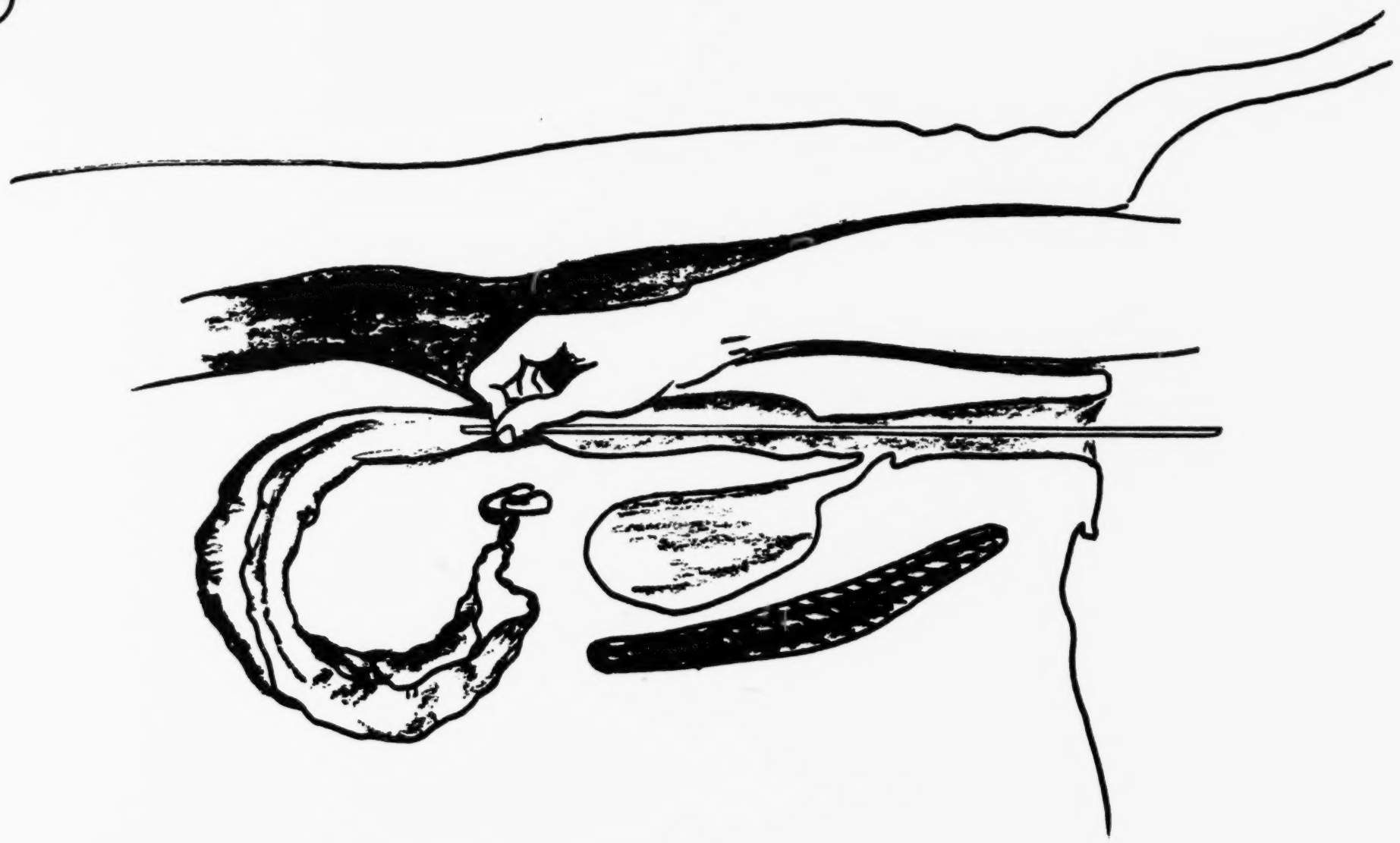
Delayed Dormant

Early Pre pink

Pre pink

Full Bloom

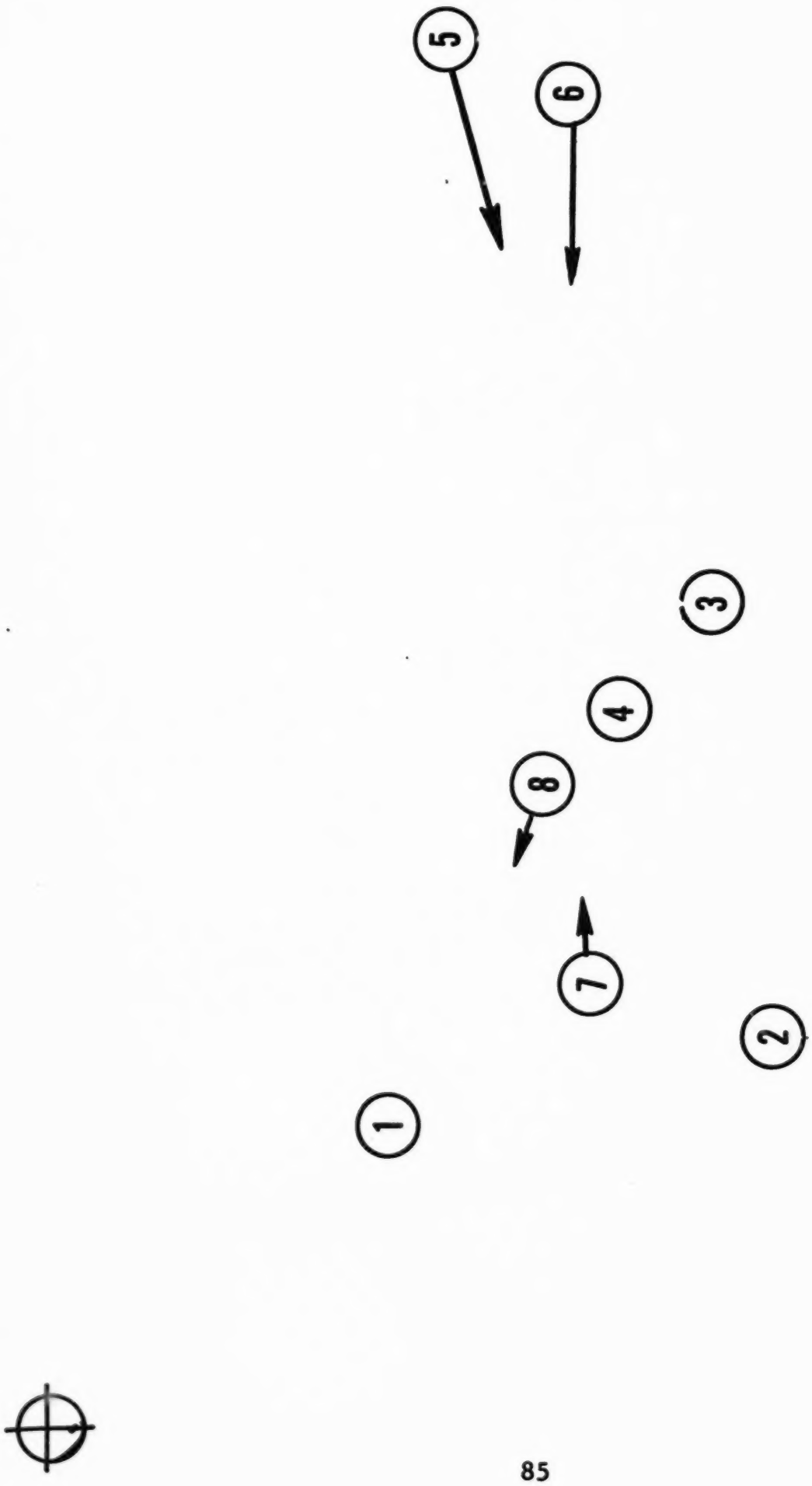
Post Blossom

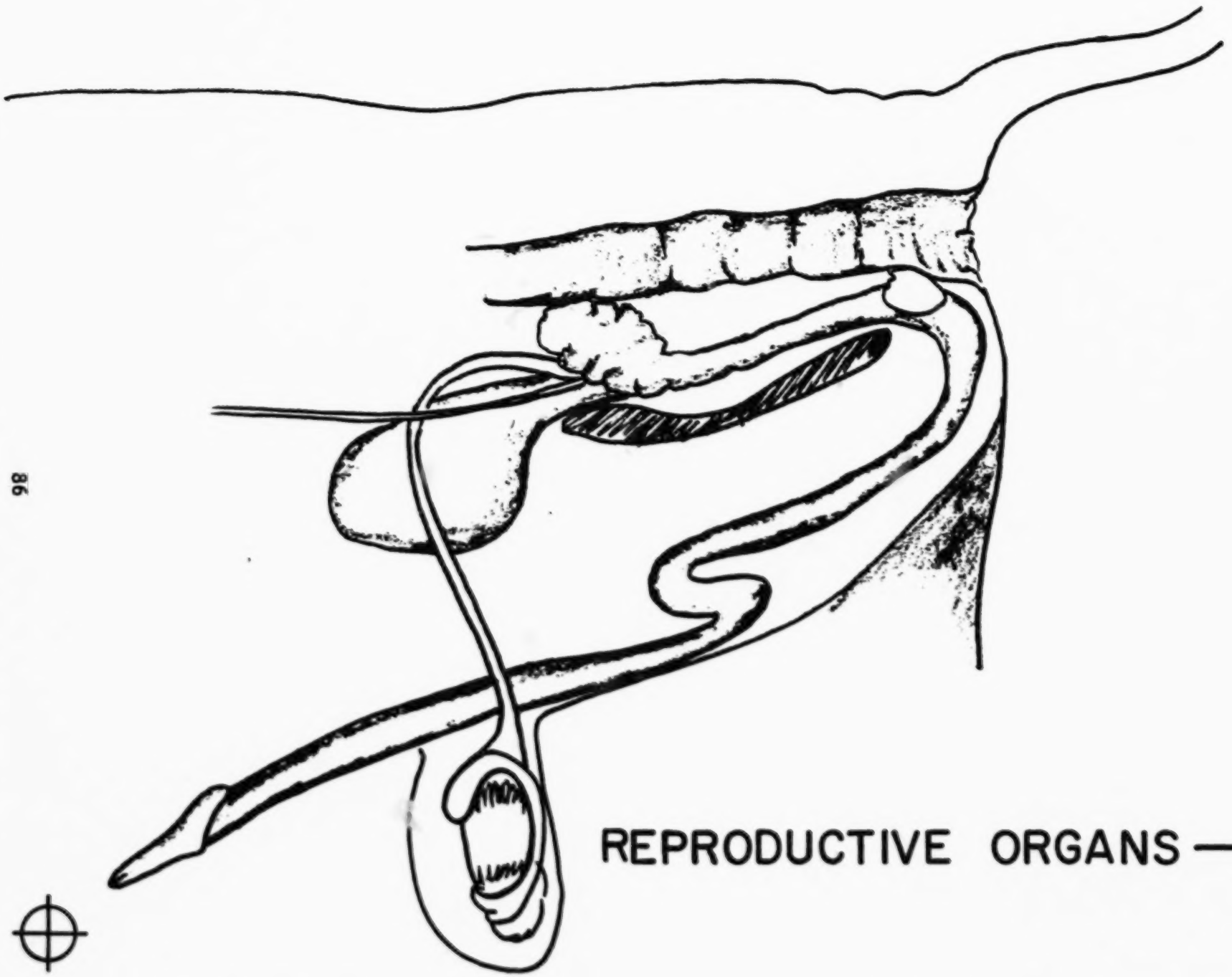


DEEP UTERINE INSEMINATION OF THE COW

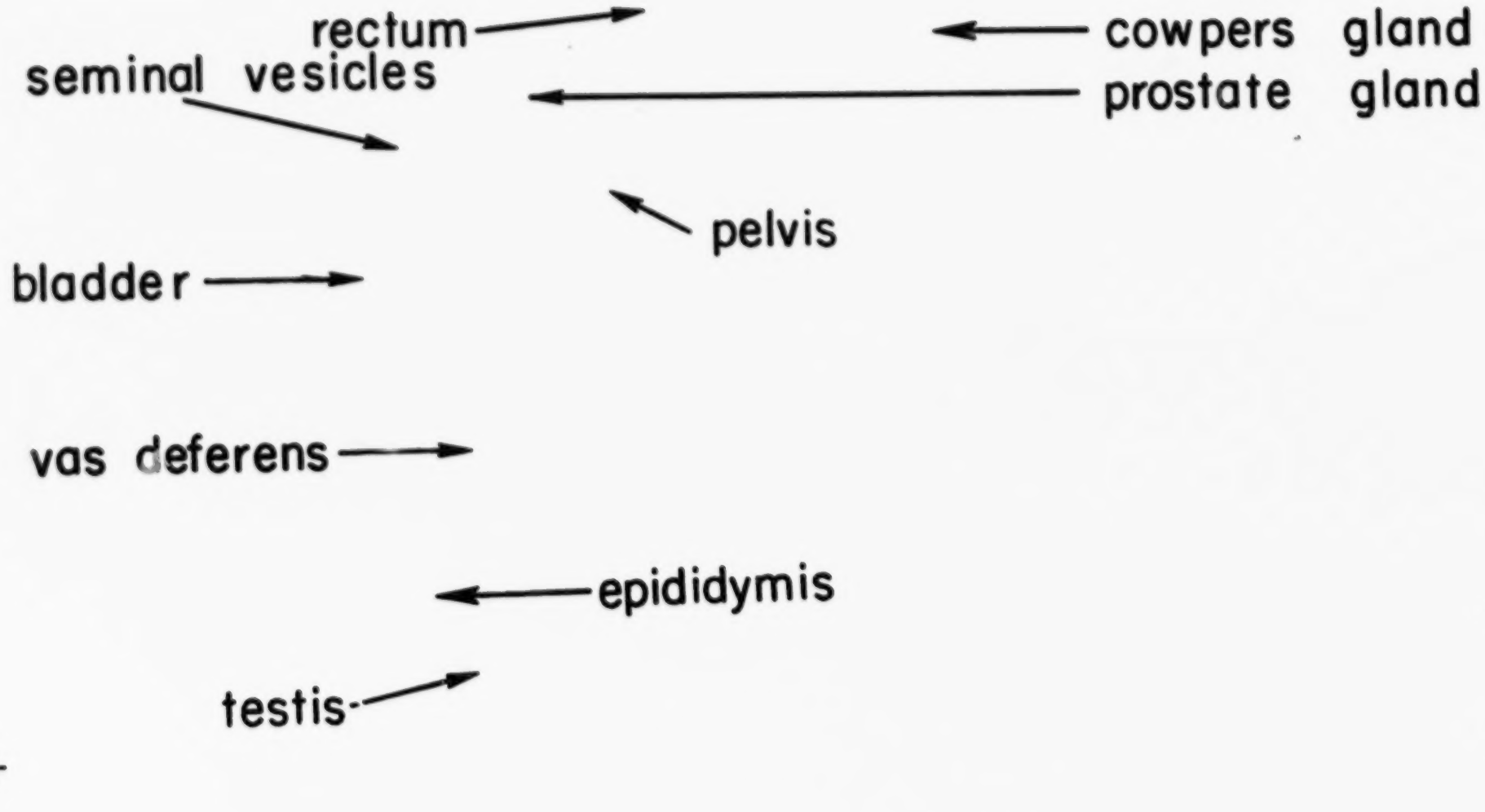
rectum
cervix
ovaries
catheter
vulva
bladder
pelvic bone
uterine horns

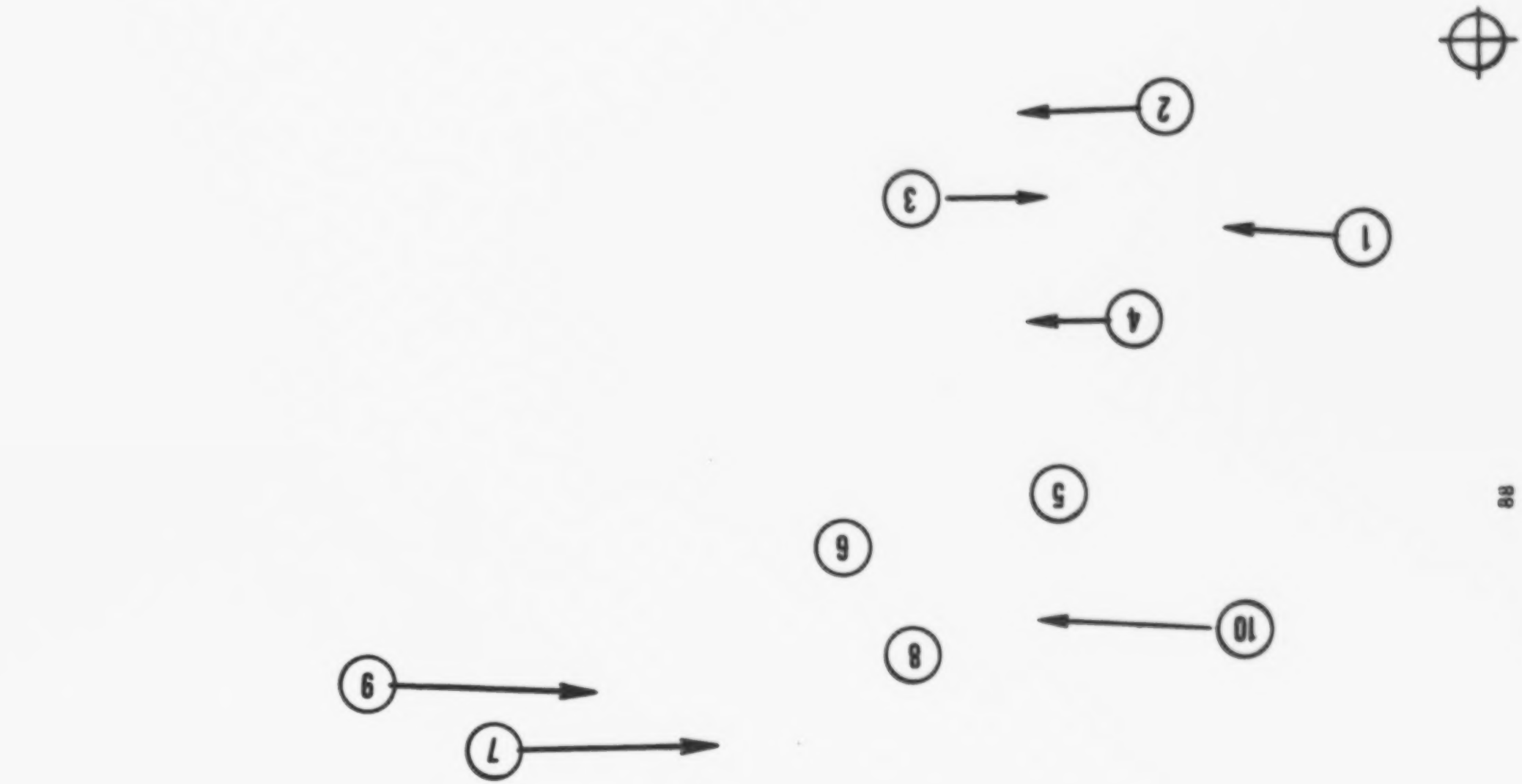
84


5
6
3
4
8
7
2
1



REPRODUCTIVE ORGANS — BULL


rectum
cowpers gland
seminal vesicles
prostate gland
pelvis
bladder
vas deferens
epididymis
testis


1
2
3
4
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6
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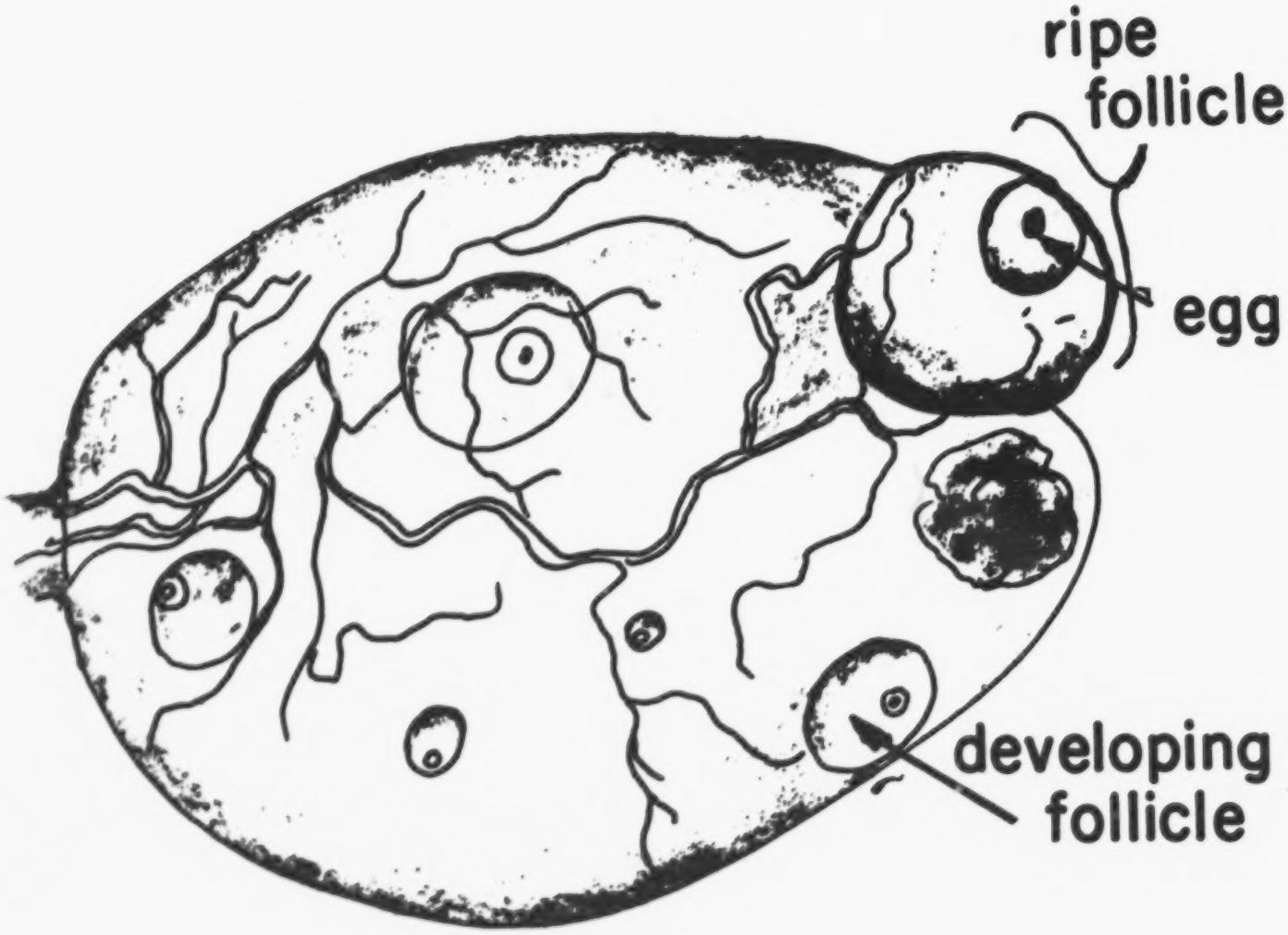
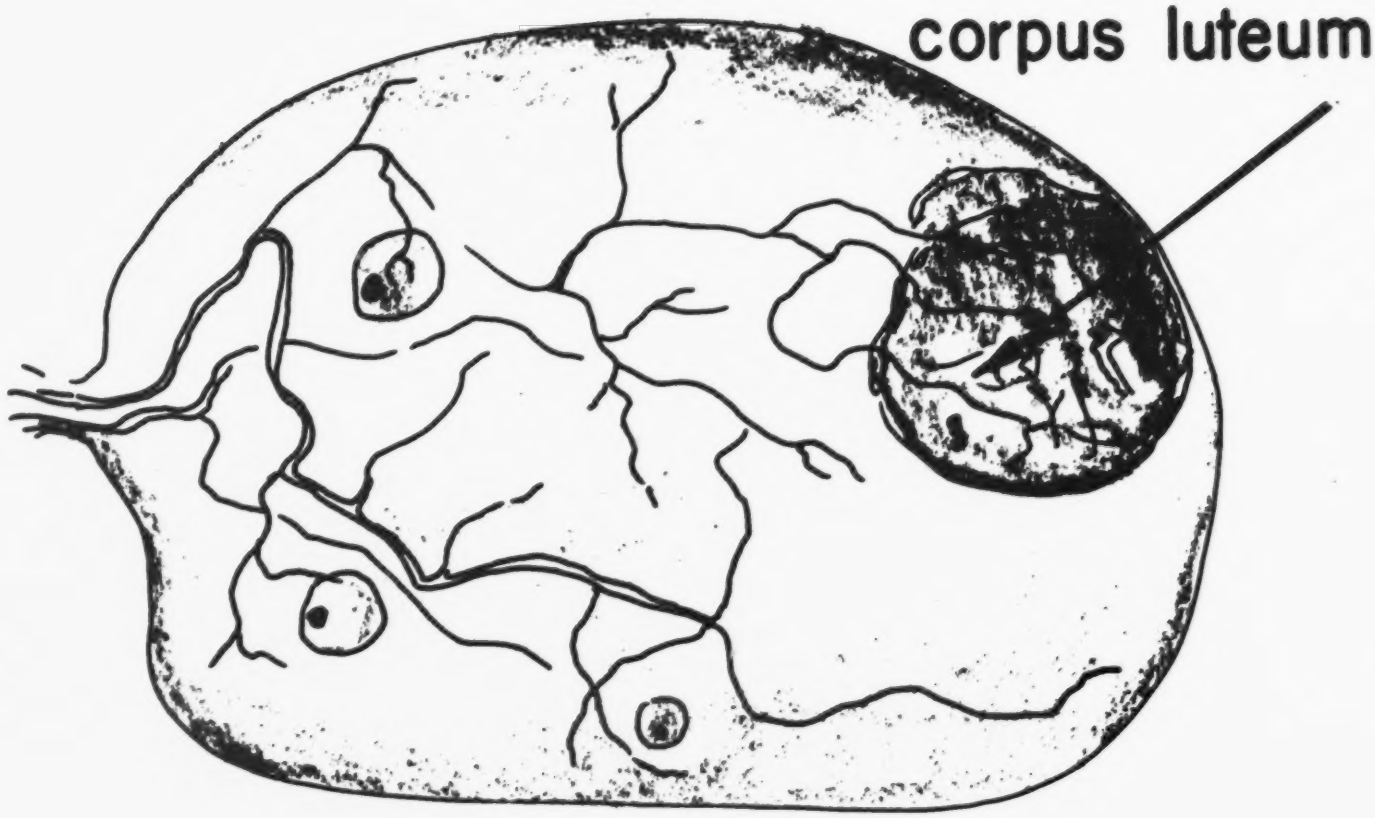
8
9
10



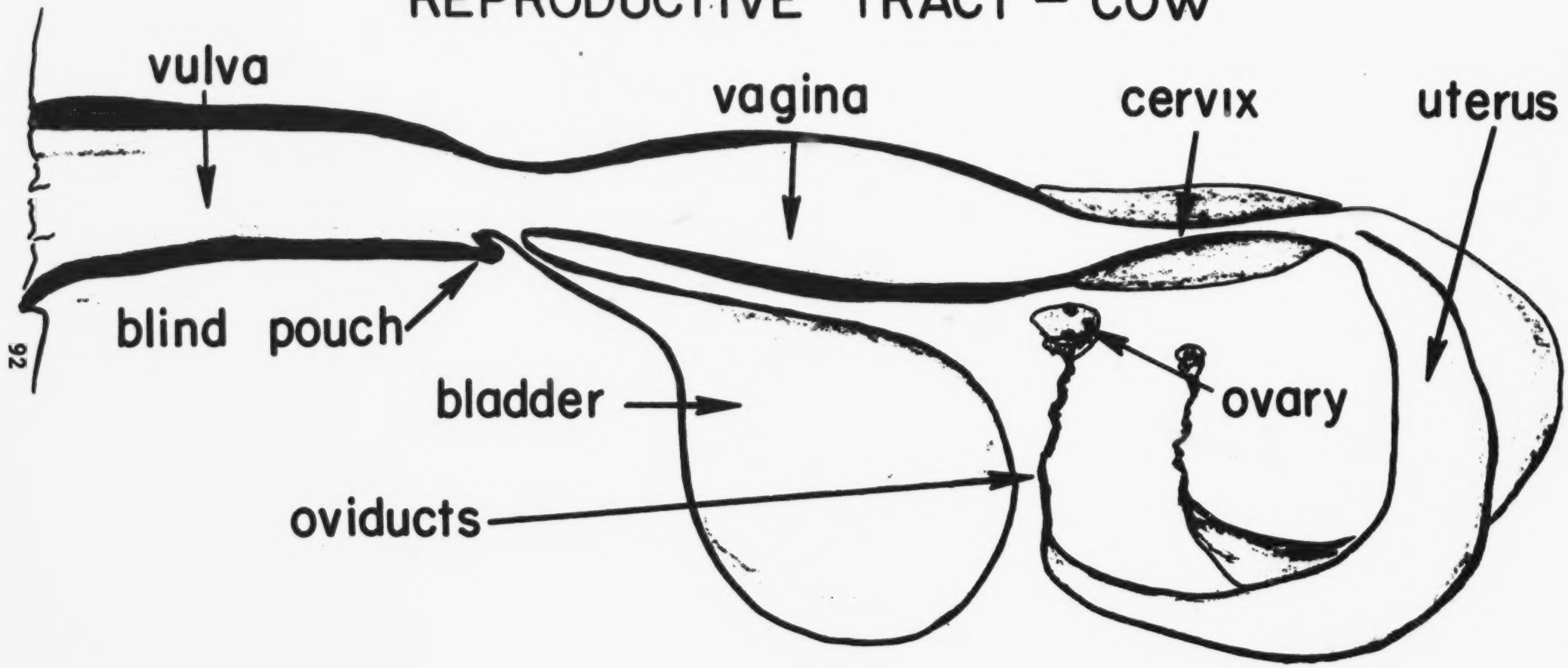
COW OVARY DURING HEAT



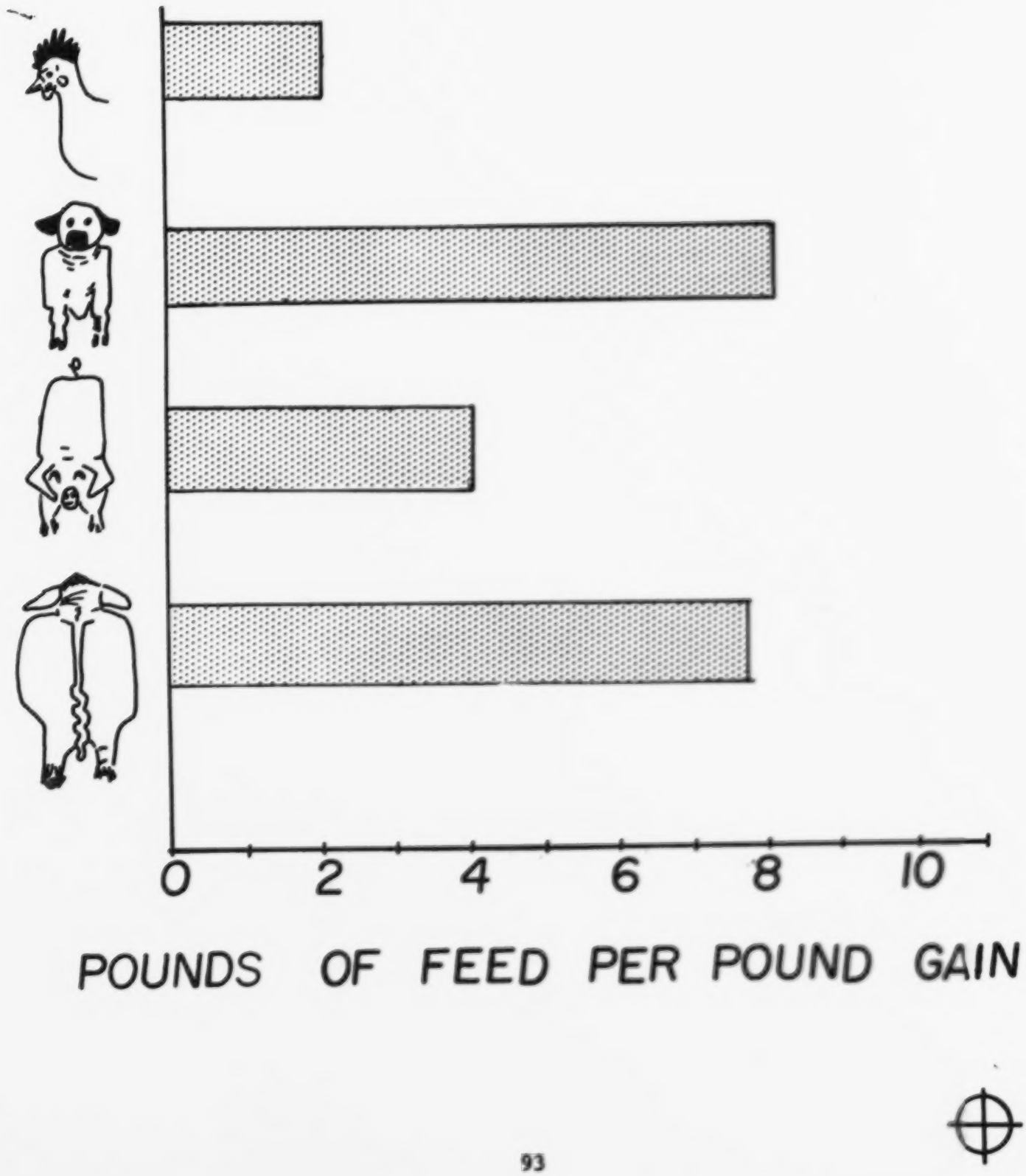
COW OVARY NOT DURING HEAT

Egg And Sperm

REPRODUCTIVE TRACT – COW



92


0
2
4
6
8
10
POUNDS OF FEED PER POUND GAIN

FEED CONVERSION

2-2.5

RUMINANT 7.5-8

3.3-4

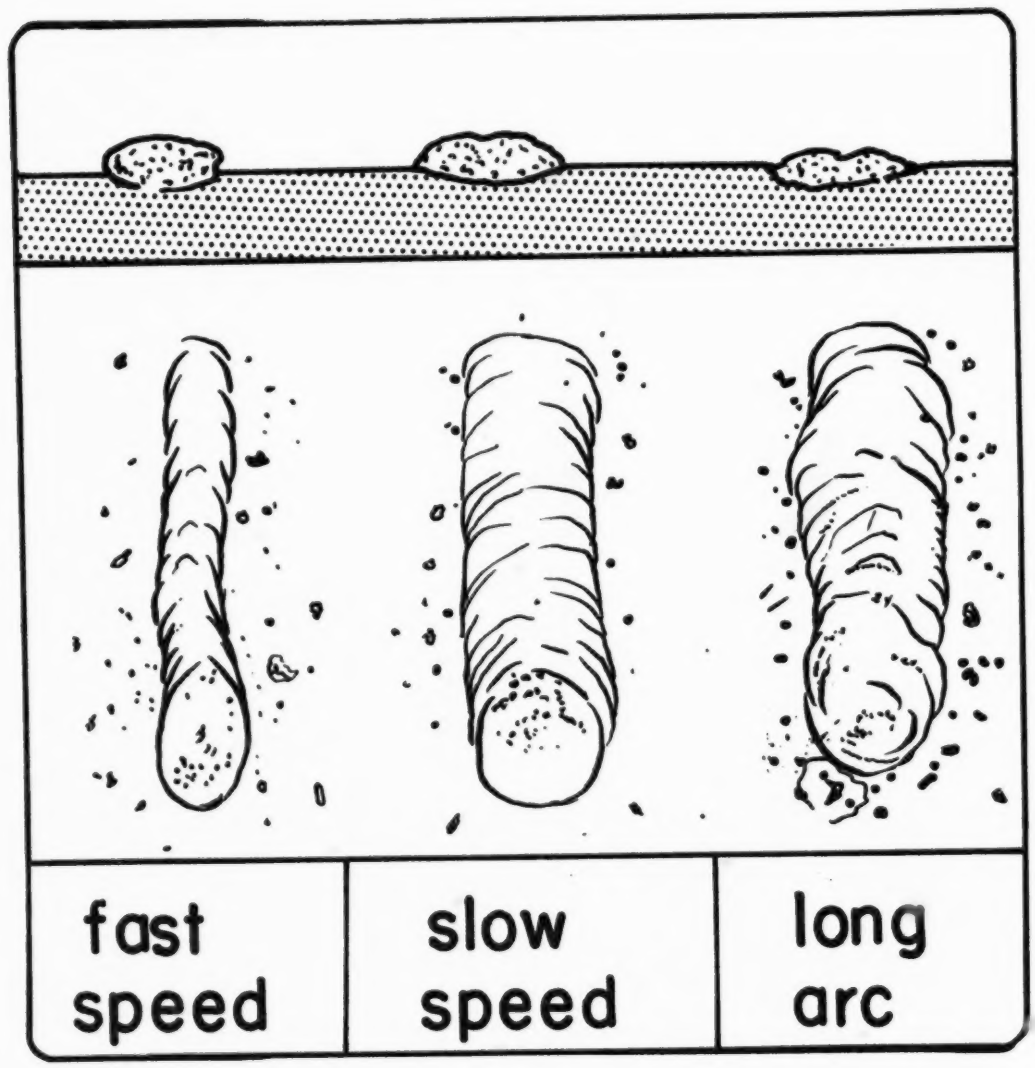
RUMINANT 7.5-8

$$\frac{\text{POUNDS OF FEED}}{\text{POUNDS OF GAIN}} = \text{EFFICIENCY FACTOR}$$

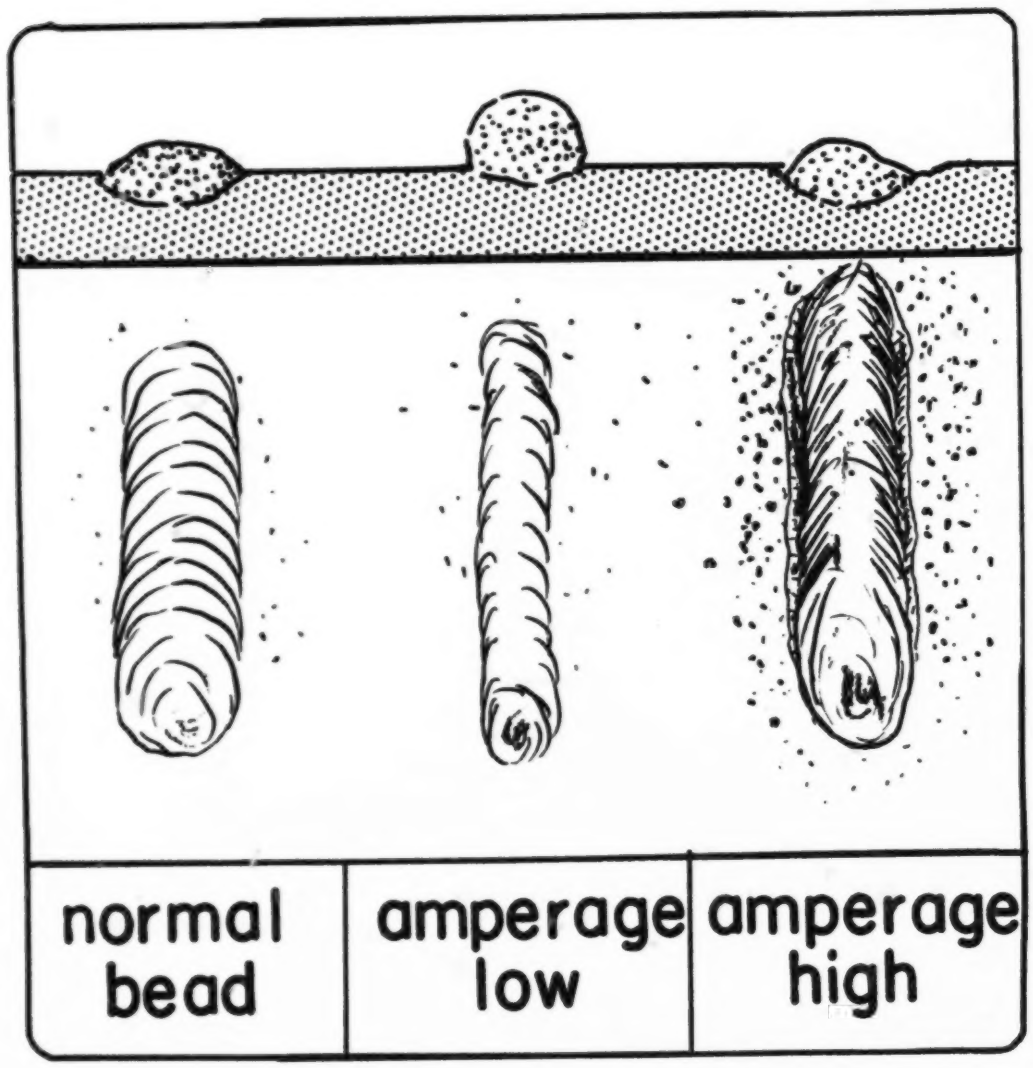
$$\frac{\text{Lb. FEED}}{\text{Lb. GAIN}} = \frac{\quad}{\quad}$$

$$\frac{\text{TOTAL COST}}{\text{NO. OF POUNDS}} = \text{COST PER POUND OF FEED}$$

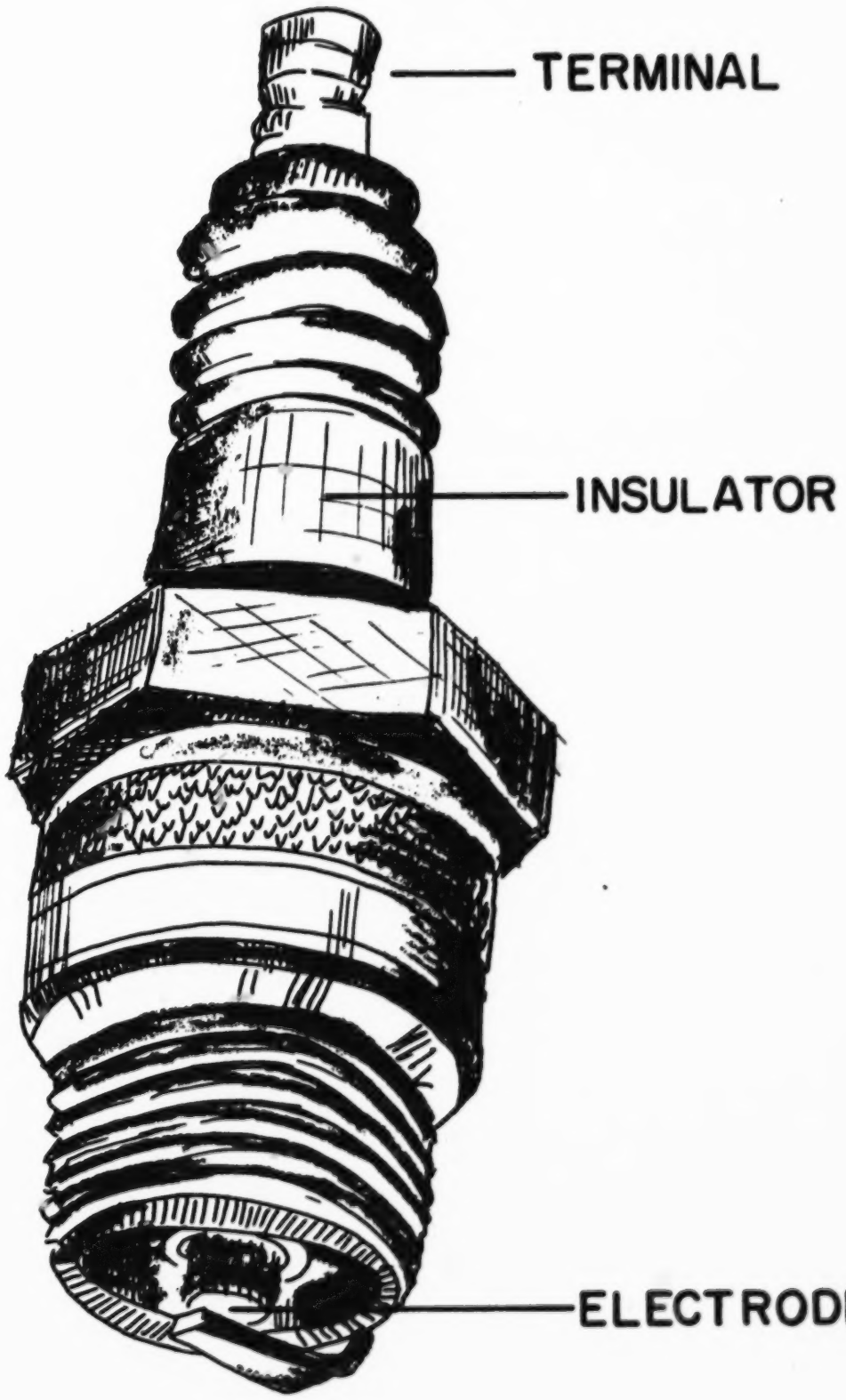
$\$ \cdot \frac{\text{COST}}{\text{POUNDS}} = \$ \cdot$



Arc Welding Beads



normal bead	amperage low	amperage high


TERMINAL
INSULATOR
ELECTRODES

FUTURE FARMERS OF AMERICA

VOCATIONAL AGRICULTURE FFA

GREENHAND

CHAPTER FARMER

STATE FARMER

AMERICAN FARMER

HONORARY

HONORARY

HONORARY

APPENDIX A

Questionnaires Sent to Teachers to Obtain Evidence Regarding Acceptability, Adequacy, and Use of Masters

Dear _____:

In reference to your use and opinion as to value of the overhead transparency masters booklet which you received last summer at conference, we would like for you to complete the following questions and submit them to this office:

YES ___ NO ___ I have used the overhead transparency masters as a part of my classroom teaching.

YES ___ NO ___ I feel that this booklet of overhead transparency masters are of definite value in aids to teaching in the classroom and would like to see a supplement to this booklet produced.

By number, list the transparency masters you think should be revised.

OE 6000 (6-66) DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON 25, D.C.

ERIC DOCUMENT RESUME

DATE OF RESUME: June, 1967

1. ACCESSION NO. | 2. ERIC SATELLITE CODE | 3. CLEARING HOUSE CONTROL NO.

4. SOURCE: U.S. Dept. of Health, Education, and Welfare
Office of Education, Bureau of Research
Interim Report (11/66 - 6/67)

5. TITLE
Transparency Masters for Agricultural Education
Project No. OE7-0031

6. AUTHOR(S): Long, Gilbert A., Magisos, Joel H., Sleeth, Stanford

7. DATE: 6/67 | 8. PAGINATION: 100 | 9. REFERENCES: 4

10. REPORT/SERIES NO.: VEP 15

11. CONTRACT NO.: OEG-4-7-070031-1626

12. PUBLICATION TITLE: Transparency Masters for Agricultural Education

13. EDITOR(S): N.A.

14. PUBLISHER: Dept. of Education, Wash. State U., Pullman, Wash

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DATE, NAME, AND COMPLETE ADDRESS OF AUTHORITY
TYPE OF RELEASE

15. ABSTRACT (250 words max.)

This study tested results of involving Vocational Agriculture teachers in development and experimental use of overhead projection masters.

In workshops thirty-five teachers planned, used, and recommended revisions of masters.

Inquiry reveals that 83 per cent of the teachers used the materials during the 1966-67 school year. Eighty-nine per cent express desire for additional materials of this type.

16. RETRIEVAL TERMS (Continue on reverse)

Teacher involvement
Overhead projection techniques
Agricultural curriculum planning
Visual aids, agriculture
Teacher education, agriculture

17. IDENTIFIERS

Vo-Tech. Ed R. and D. Project
OE7-0031

Figure 3. ERIC Document Resume